



**Massachusetts Bay  
Transportation Authority**

Proposal for New Orange  
and Red Line Vehicles  
MBTA "RFP No. CAP 27-10"

Submitted by:



## **Part B Technical Proposal, Statements and Certifications Regarding Eligibility**

**COPY**



**Volume 1 of 2**

May 15, 2014





Name: Yanbin Yu  
Position: Treasurer  
Telephone: 1-212-704-6776  
Email: [yuyanbin@chinacnr.com](mailto:yuyanbin@chinacnr.com)

Date: May 15, 2014

Our Reference: CNRMA-140512-UB226M-00001

Massachusetts Bay Transportation Authority  
Materials Management Department  
10 Park Plaza, Room 2810  
Boston, Massachusetts 02116

Attention: Mr. Christopher Carven / Project Coordinator

**Subject: Cover Letter - RFP No. CAP 27-10 New Orange and Red Line Vehicles**

Dear Mr. Carven,

CNR MA Corporation ("CNR MA"), a Massachusetts corporation, is pleased to submit our proposal related to the RFP No. CAP 27-10 New Orange and Red Line Vehicles.

CNR MA is a joint venture established by China CNR Corporation Limited ("CNR") and CNR Changchun Railway Vehicles Co., Ltd. ("CNR CRC"). CNR, with worldwide sales of US\$17 billion dollars and 90,000 employees, is one of the largest rolling stock companies, including 27 subsidiaries, in the world. CNR CRC, established in 1954, is the largest rolling stock manufacturer under CNR with supply contracts in over 13 countries and districts including Brazil, Argentina, Saudi Arabia, Thailand, Australia, New Zealand and Hong Kong, among others. Please note that CNR MA, CNR, and CNR CRC will be referred to hereinafter as "CNR".

CNR is committed to developing a rolling stock manufacturing hub in Springfield, and with an investment of more than US\$60 million, making Massachusetts the center of our North American transportation business. CNR has entered into an Option Agreement to purchase 40 acres of land in Springfield where CNR will build its permanent assembly/manufacturing facility. Over the course of building out this facility, CNR anticipates incrementally creating minimum 150 jobs at the plant, in addition to nearly 100 construction jobs to build the plant and surrounding improvements.

CNR believes that in choosing Springfield as its North American hub, it will enjoy a number of important advantages as it expands its business here. Springfield is strategically located near large metropolitan populations on the East Coast of the United States with ready access to highway, rail, and air transportation to support the operations. With a robust number of colleges and universities,





Western Massachusetts offers the type of intellectual capital needed for complex engineering work to be completed. CNR has already met with representatives from local vocational and technical training programs and anticipates reciprocal benefits from working with local students who may be trained for future jobs at the facility.

Additionally, local political, business and community leaders have enthusiastically embraced the potential for Springfield to not only create a vibrant economic engine to the area, but are excited that the city will return to its historic manufacturing roots. The Wason Manufacturing Company was among the first rail car facilities in the U.S. concentrating on manufacturing streetcars and electrified railway cars. With a unanimous endorsement from the Springfield City Council supporting CNR's site plans, and a letter of support from The East Springfield Neighborhood Council pledging cooperation and collaboration, CNR continues to foster relationships and garner support to re-establish a facility in Springfield.

*Here are some highlights of our proposal:*

- *We will construct a permanent manufacturing facility staffed with minimum 150 employees in Springfield, MA.*
- *More than US\$60 million dollar investment will be made to construct and develop a manufacturing facility. The construction work thereon will create nearly 100 direct construction jobs during a period of 15 months.*
- *Pre-award M/WBE outreach workshops were held, and we will continue to work with minority groups to reach our target of 16% for the Base Award Contract and 15% for the Total Contract. This target includes 30% of the total construction contract amount that will be subcontracted to unutilized small business enterprises such as M/WBE.*
- *We have hired an U.S. experienced Project Manager, and will maximize the employment of professional experts familiar with American practices and standards for successful execution of the contract.*

We welcome this opportunity to establish a rolling stock manufacturing base in Springfield and grow together with the people of Western Massachusetts.

Our team is uniquely qualified to lead this project to success, supported by the presence of Sojitz Corporation of America, with over 35 years of experience in sales, marketing, and project delivery for the world's top manufacturers. Sojitz, together with the support of various individual experts in the industry, has been a key to the successful execution of such projects.

Mr. Yanbin Yu is fully authorized to sign the proposal. Attached herewith please find (1) a U.S. notarized Secretary Certificate certifying to the board minutes of CNR dated May 4, 2014 authorizing CNR's participation as a joint venture partner and shareholder of CNR MA in submitting the proposal to design, manufacture and deliver the orange and red line vehicles project





of the MBTA (the "MBTA Project"), authorizing CNR MA to participate in the MBTA Project, and authorizing Mr. Yu to sign and submit the proposal on behalf of CNR MA; (2) a U.S. notarized Secretary Certificate certifying to the board minutes of CNR CRC dated May 5, 2014 authorizing CNR CRC's participation as a joint venture partner and shareholder of CNR MA in submitting the proposal related to the MBTA Project, authorizing CNR MA to participate in the MBTA Project, and authorizing Mr. Yu to sign and submit the proposal on behalf of CNR MA; (3) a U.S. notarized Secretary Certificate certifying to the board resolution of CNR MA dated May 8, 2014 authorizing CNR MA's participation in the MBTA Project and authorizing Mr. Yu to sign and submit the proposal on behalf of CNR MA.

The Offeror's name, post office address, telephone number, fax number are set forth as below:

CNR MA Corporation  
c/o Dai Iwama  
Sojitz Corporation of America  
1120 Avenue of the Americas  
New York, NY 10036  
Tel +1 212 704-6776  
Fax +1 212 704-6880

The authorized person's name, title, telephone number, email address are set forth as below:

Yanbin Yu  
Treasurer of CNR MA Corporation  
Telephone number (China): +86 10 51897284  
Telephone number (US): +1 212 704 6776  
Email address: [yuyanbin@chinacnr.com](mailto:yuyanbin@chinacnr.com)

For the purpose of facilitating and expediting communications, Mr. Dai Iwama - Associate Director of Sojitz Corporation of America will serve as our primary point of contact for CNR during the evaluation phase of this proposal. Therefore, for any questions on the proposal, please direct them to him at 1120 Avenue of the Americas, New York, NY 10036, Phone 212-704-6776, Fax 212-704-6880 or [iwama.daisuke@sojitz.com](mailto:iwama.daisuke@sojitz.com).

Truly yours,

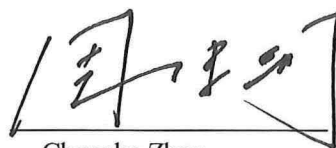
Yanbin Yu, Treasurer  
CNR MA Corporation



**SECRETARY'S CERTIFICATE**

The undersigned hereby certifies that he is the duly appointed and qualified Secretary of CNR MA Corporation, a corporation incorporated under the laws of the Commonwealth of Massachusetts (the "Corporation"), and that as such, is authorized to execute this Certificate on behalf of the Corporation and further certifies that attached hereto as Exhibit A is a true and complete copy of the resolutions, duly adopted by the Board of Directors of the Corporation on May 8, 2014. Such resolutions are in full force and effect on and as of the date hereof, and have not been amended, altered, revoked or rescinded, and such resolutions are filed with the records of the Board of Directors.

IN WITNESS WHEREOF, the undersigned has caused this Certificate to be signed on behalf of the Corporation this tenth day of May, 2014.




Chuanhe Zhou  
Secretary, CNR MA Corporation

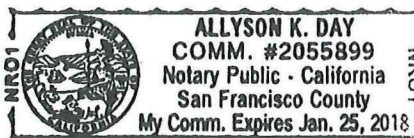
STATE OF CALIFORNIA  
COUNTY OF SAN FRANCISCO

On the 10 day of May in the year 2014 before me, the undersigned, personally appeared Chuanhe Zhou, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Witness my hand and official seal.

  
Notary Public  
Printed Name: Allyson K. Day  
My Commission Expires: 1/25/18





**Exhibit A****CNR MA Corporation**

Written Consent of the Board of Directors  
in Lieu of Meeting

pursuant to Chapter 156D § 8.21 of the General Laws of Massachusetts

As of May 8, 2014

The undersigned, being all the members of the board of directors (the "Board") of CNR MA Corporation, a corporation incorporated under the laws of the Commonwealth of Massachusetts (the "Corporation"), consent to and authorize the adoption of the resolutions by the Board which appear below.

WHEREAS, the Corporation has been established as a joint venture between China CNR Corporation Limited, a corporation incorporated under the laws of the People's Republic of China ("CNR"), and CNR Changchun Railway Vehicles Co., Ltd., a corporation incorporated under the laws of the People's Republic of China ("CNR CRC");

WHEREAS, the Corporation shall be the offeror for the Massachusetts Bay Transportation Authority's Request for Proposal No. CAP 27-10 New Orange and Red Line Vehicles procurement project (the "Project");

WHEREAS, CNR and CNR CRC have authorized the Corporation and the Board to appoint Mr. Xiwei Lu and Mr. Yanbin Yu (collectively, the "Corporation Officers") to sign, execute and submit, on behalf of the Corporation, PART A PRICE PROPOSAL and PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY (together, the "Proposal") of the Project as well as all other documents related to the Proposal or the Project (collectively, the "MBTA Documents"); and

WHEREAS, the Corporation desires to authorize the Corporation Officers, or either one of them acting singly, to sign and submit to Massachusetts Bay Transportation Authority (the "MBTA") the MBTA Documents, including, but not limited to, the Proposal for the Project.

NOW, THEREFORE, be it RESOLVED, that the Board approves and authorizes the Corporation's participation in the Project;

Further Resolved, that, the Board authorizes the Corporation Officers, or either of them acting singly, to sign and submit to the MBTA the MBTA Documents, including, but not limited to, the Proposal for the Project, in such form, for such proposed prices and upon such other terms as such officer or officers determine appropriate and in the best interests of the Corporation, and to take all other actions in connection with the Proposal or the Project as

such officers deem necessary or appropriate;

Further Resolved, that, the Board approves and authorizes the Corporation Officers and agents of the Corporation to take, or cause to be taken, such other actions and to execute and deliver, or cause to be executed and delivered, such other documents, which he or they may determine are necessary or appropriate in connection with the Proposal and the Project, and all actions heretofore taken by the Corporation Officers and agents of the Corporation in connection with the subject of the foregoing resolutions be, and each of them hereby is approved, ratified and confirmed in all respects.

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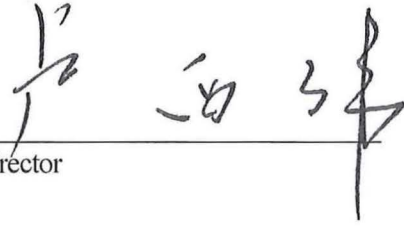
*[Signature Page Follows]*

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IN WITNESS WHEREOF, the undersigned directors have executed this consent as of  
the day and year first above written.

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Xiwei Lu, Director



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Chuanhe Zhou, Director



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Yanbin Yu, Director



中国北车股份有限公司  
CHINA CNR CORPORATION

### SECRETARY'S CERTIFICATE

The undersigned hereby certifies that he/she is the duly appointed and qualified Secretary of China CNR Corporation Limited, a corporation incorporated under the laws of the People's Republic of China (the "Corporation"), and that as such, is authorized to execute this Certificate on behalf of the Corporation and further certifies that attached hereto as Exhibit A is a true and correct excerpt from the minutes of the Meeting of the Board of Directors of the Corporation held on May 4, 2014, which have not been otherwise amended and continue in full force and effect.

IN WITNESS WHEREOF, the undersigned has caused this Certificate to be signed on behalf of the Corporation this tenth day of May, 2014.

Jilong Xie  
Secretary, China CNR Corporation Limited

STATE OF CALIFORNIA  
COUNTY OF SAN FRANCISCO

On the 10 day of May in the year 2014 before me, the undersigned, personally appeared Jilong Xie, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

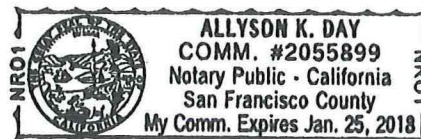
I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Witness my hand and official seal.

Notary Public

Printed Name: Allyson K. Day

My Commission Expires: 1/25/18







**Exhibit A**

**CHINA CNR CORPORATION LIMITED**

**MINUTES OF A MEETING OF THE BOARD OF DIRECTORS**

May 4, 2014

A meeting of the Board of Directors (the “Board”) of China CNR Corporation Limited (“CNR”) was held by telephone conference on May 4, 2014 at approximately 21: 00 Eastern Time. Present at the meeting were the following directors:

Mr. Dianguo Cui, Mr. Guohua Xi, Mr. Jun Wan, Mr. Fenghua Li,  
Mr. Zhong Zhang, Ms. Ying Shao, Mr. Dinghua Xin

who together represented a majority of the voting directors in office and thus constituting a quorum of directors for the conduct and transaction of business in accordance with the CNR’s by-laws and the laws of the People’s Republic of China.

Mr. Dianguo Cui acted as Chairman of the meeting, and Mr. Jilong Xie acted as Secretary of the meeting. Mr. Dianguo Cui called the meeting to order.

Mr. Dianguo Cui hosted the Board discussion on the following resolutions, which were seconded and approved unanimously by all board members present to the meeting:

Now Therefore Be It Resolved, that the Board shall approve and authorize CNR’s participation as a joint venture partner in the Massachusetts Bay Transportation Authority’s Request for Proposal No. CAP 27-10 New Orange and Red Line Vehicles procurement project (the “Project”) and shareholder of the CNR MA Corporation, a corporation incorporated under the laws of the Commonwealth of Massachusetts (“CNR MA”) who will be the offeror for the Project, along with CNR Changchun Railway Vehicles Co., Ltd. (“CNR CRC”), the other joint venture partner and shareholder of the CNR MA;

Further Resolved, that, the Board shall approve and authorize CNR MA to take all legal actions necessary to approve and participate in the Project;

Further Resolved, that the Board shall approve and authorize the board of CNR MA to appoint Mr. Xiwei Lu and Mr. Yanbin Yu, officers of CNR MA Corporation, or either one of them acting singly, to sign, execute and submit, on



中国北车股份有限公司  
CHINA CNR CORPORATION

behalf of CNR MA, PART A PRICE PROPOSAL and PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY (together, the "Proposal") of the Project in such form, for such proposed prices and upon such other terms as Mr. Xiwei Lu or Mr. Yanbin Yu determines appropriate and in the best interests of CNR MA, as well as all other documents related to the Proposal or the Project; and

Further Resolved, that, the Board shall approve and authorize the officers, directors and agents of CNR MA to take, or cause to be taken, such other actions and to execute and deliver, or cause to be executed and delivered, such other documents, which he or they may determine are necessary or appropriate in connection with the Proposal and the Project, and all actions heretofore taken by the officers, directors and agents of CNR MA in connection with the subject of the foregoing resolutions be, and each of them hereby is approved, ratified and confirmed in all respects.

Respectfully submitted,

Jilong Xie

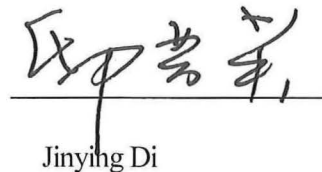
Secretary of the Meeting



## SECRETARY'S CERTIFICATE

The undersigned hereby certifies that she is the duly appointed and qualified Secretary of CNR Changchun Railway Vehicles Co., Ltd., a corporation incorporated under the laws of the People's Republic of China (the "Corporation"), and that as such, is authorized to execute this Certificate on behalf of the Corporation and further certifies that attached hereto as Exhibit A is a true and correct excerpt from the minutes of the Meeting of the Board of Directors of the Corporation held on May 5, 2014, which have not been otherwise amended and continue in full force and effect.

IN WITNESS WHEREOF, the undersigned has caused this Certificate to be signed on behalf of the Corporation this tenth day of May, 2014.

  
Jinying Di

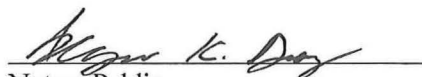
Secretary, CNR Changchun Railway Vehicles Co., Ltd.

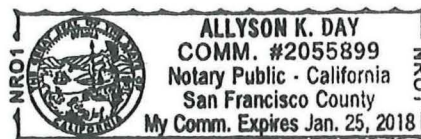
## STATE OF CALIFORNIA COUNTY OF SAN FRANCISCO

On the 10 day of May in the year 2014 before me, the undersigned, personally appeared Jinying Di, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

  
Notary Public  
Printed Name: Allyson K. Day  
My Commission Expires: 1/25/18



## Exhibit A

### CNR CHANGCHUN RAILWAY VEHICLES CO., LTD.

#### MINUTES OF A MEETING OF THE BOARD OF DIRECTORS

May 5, 2014

A meeting of the Board of Directors (the "Board") of CNR Changchun Railway Vehicles Co., Ltd. ("CNR CRC") was held by telephone conference on May 5, 2014 at approximately 22:00 Eastern Time. Present at the meeting were the following directors:

Mr. Run Wang;  
Mr. Zhongyi An;  
Mr. Xiaoming Chen;  
Mr. Mingnan Jin;  
Ms. Jinying Di;  
Mr. Jinkun Yu;  
Mr. Jun Yu

who together represented a majority of the voting directors in office and thus constituting a quorum of directors for the conduct and transaction of business in accordance with the CNR CRC's by-laws and the laws of the People's Republic of China.

Mr. Run Wang acted as Chairman of the meeting, and Ms. Jinying Di acted as Secretary of the meeting. Mr. Run Wang called the meeting to order.

Mr. Run Wang hosted the Board discussion on the following resolutions, which were seconded and approved unanimously by all board members present to the meeting:

Now Therefore Be It Resolved, that the Board shall approve and authorize CNR CRC's participation as a joint venture partner in the Massachusetts Bay Transportation Authority's Request for Proposal No. CAP 27-10 New Orange and Red Line Vehicles procurement project (the "Project") and shareholder of the CNR MA Corporation, a corporation incorporated under the laws of the Commonwealth of Massachusetts ("CNR MA") who will be the offeror for the Project, along with China CNR Corporation Limited ("CNR"), the other joint partner and shareholder of CNR MA;

Further Resolved, that, the Board shall approve and authorize CNR MA to take all legal actions necessary to approve and participate in the Project;


Further Resolved, that the Board shall approve and authorize the board of CNR MA to appoint Mr. Xiwei Lu and Mr. Yanbin Yu, officers of CNR MA, or either one of them acting singly, to sign, execute and submit, on behalf of CNR MA, PART A PRICE



PROPOSAL and PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY (together, the "Proposal") of the Project in such form, for such proposed prices and upon such other terms as Mr. Xiwei Lu or Mr. Yanbin Yu determines appropriate and in the best interests of CNR MA, as well as all other documents related to the Proposal or the Project; and

Further Resolved, that, the Board shall approve and authorize the officers, directors and agents of CNR MA to take, or cause to be taken, such other actions and to execute and deliver, or cause to be executed and delivered, such other documents, which he or they may determine are necessary or appropriate in connection with the Proposal and the Project, and all actions heretofore taken by the officers, directors and agents of CNR MA in connection with the subject of the foregoing resolutions be, and each of them hereby is approved, ratified and confirmed in all respects.

Respectfully submitted,



Jinying Di  
Secretary of the Meeting

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**SECTION B**

**PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**REQUEST FOR PROPOSAL NO.: RFP NO. CAP 27-10**

**NOTE:** The Offeror shall seal this portion of its Proposal in a separate envelope



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**FORM OF TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

This constitutes the undersigned Offeror's Technical Proposal and Statements and Certifications Regarding Eligibility, including all requirements relating to Minority and Women Owned Business Enterprises (M/WBE) participation, for the base contract and options for furnishing and delivery of Orange Line Cars, Red Line Cars, Capital Spares, Manuals, Diagnostic Test Equipment and Training Aids, including all materials, services and costs for freight and insurance to MBTA Facilities in the greater Boston area, as provided in the contract provisions (Contract Provisions) of Request for Proposals No. CAP 27-10 (RFP), Specification No. VE-10-036 (Contract Specification), and all applicable Addenda (Solicitation Documents).

Proposal No. : CAP 27-10

Name of Offeror: CNR MA Corporation

Business Address: 111 Huntington Avenue, Boston, MA 02199

Address where Notification: Daisuke Iwama, Sojitz Corporation of America, 1120 Avenue of the Americas,  
New York, NY, 10036  
should be sent

Telephone No.: +1 212 704 6776 Facsimile Number: +1 212 704 6880

E-mail No.: iwama.daisuke@sojitz.com

The undersigned acknowledges that this Technical Proposal and Statements and Certifications Regarding Eligibility is prepared as if it is a best and final offer, and that the Authority has reserved the right to make award to offers submitted in response to the RFP without conducting negotiations and seeking best and final offers.

The undersigned acknowledges that the Technical Proposal and Statements and Certifications Regarding Eligibility shall be valid for one hundred and eighty (180) days from date of proposal submittal. If the Authority requires additional time for its review, the Authority reserves the right to extend the validity of the proposal in thirty (30) day increments. Prices submitted remain in effect as originally submitted.

This Proposal is made this 15th day of May, 2014, and executed by the undersigned:

(IF AN INDIVIDUAL)

Signature of Offeror \_\_\_\_\_

Business Address \_\_\_\_\_

Federal Identification/Social Security No. \_\_\_\_\_

(IF A PARTNERSHIP)

Firm Name \_\_\_\_\_

BY\* \_\_\_\_\_

Title: \_\_\_\_\_

Business Address \_\_\_\_\_

Federal Identification/Social Security No. \_\_\_\_\_

Name(s) and Address(es) of all Partners of the Firm: \_\_\_\_\_

(IF A CORPORATION)

Corporation Name CNR MA CorporationBY\* Mr. Yanbin Yu Title TreasurerBusiness Address 111 Huntington Avenue, Boston, MA 02199Federal Identification/Social Security No. 37-1753780

**\*IMPORTANT:** As provided in Section A1.07B, attach to Cover Letter proof of authority of Officer or Agent to sign Proposal.

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**FORM OF TECHNICAL PROPOSAL**

For Part B Technical Proposal and Statements and Certifications Regarding Eligibility, each Offeror must provide a separate document responding to the Questions of Eligibility, provide a Technical Proposal in the format prescribed on Pages B-63 to B-68, and submit completed signed certifications on the forms provided



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**Attachment 1**

**Certificate of Good standing**  
**from the Secretary of State of the Commonwealth of Massachusetts**  
**of**  
**CNR MA Corporation**



**William Francis Galvin**  
Secretary of the  
Commonwealth

*The Commonwealth of Massachusetts*  
*Secretary of the Commonwealth*  
*State House, Boston, Massachusetts 02133*

**April 1, 2014**

TO WHOM IT MAY CONCERN:

I hereby certify that according to the records of this office,

**CNR MA CORPORATION**

is a domestic corporation organized on **March 17, 2014**, under the General Laws of the Commonwealth of Massachusetts.

I further certify that there are no proceedings presently pending under the Massachusetts General Laws Chapter 156D section 14.21 for said corporation's dissolution; that articles of dissolution have not been filed by said corporation; that, said corporation has filed all annual reports, and paid all fees with respect to such reports, and so far as appears of record said corporation has legal existence and is in good standing with this office.



Processed By: nem

In testimony of which,  
I have hereunto affixed the  
Great Seal of the Commonwealth  
on the date first above written.

  
Secretary of the Commonwealth

**Attachment 2**

**Three Years of Audited Financial Statements  
Of  
China CNR Corporation Limited  
and  
CNR Changchun Railway Vehicles Co., Ltd.**





China CNR Corporation Limited



China CNR Corporation Limited

ENGLISH TRANSLATION OF FINANCIAL STATEMENTS  
FOR THE YEAR 1 JANUARY 2010 TO 31 DECEMBER 2010  
IF THERE IS ANY CONFLICT OF MEANING BETWEEN THE CHINESE  
VERSION AND ENGLISH TRANSLATION, THE CHINESE VERSION WILL PREVAIL



## **AUDITORS' REPORT**

KPMG-A(2011)AR No.0661

All Shareholders of China CNR Corporation Limited:

We have audited the accompanying financial statements of China CNR Corporation Limited ("the Company"), which comprise the consolidated balance sheet and balance sheet as at 31 December 2010, the consolidated income statement and income statement, the consolidated statement of changes in equity and statement of changes in equity, the consolidated cash flow statement and cash flow statement for the year then ended, and notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

The Company's management is responsible for the preparation of these financial statements in accordance with China Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

### **Auditors' Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with China Standards on Auditing for Certified Public Accountants. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance as to whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



## AUDITORS' REPORT (CONTINUED)

KPMG-A(2011)AR No.0661

### Opinion

In our opinion, the financial statements comply with the requirements of China Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China and present fairly, in all material respects, the consolidated financial position and financial position of the Company as at 31 December 2010, and the consolidated results of operations and results of operations and the consolidated cash flows and cash flows of the Company for the year then ended.

KPMG Huazhen



Certified Public Accountants  
Registered in the People's Republic of China

Chen Yuhong

陈宇红

Beijing, the People's Republic of China

Xu Junyi

徐君祎

6 April 2011

China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2010  
*(Expressed in renminbi yuan)*

Assets	<u>2010</u>	<u>2009</u>
Current assets		
Cash at bank and on hand	5,252,876,524.00	11,363,012,113.45
Financial assets held for trading	39,987,374.89	-
Bills receivable	602,796,165.46	469,897,656.34
Accounts receivable	10,274,264,112.63	11,764,586,836.71
Prepayments	9,609,317,332.23	6,647,819,431.14
Dividends receivable	2,015,000.00	2,336,968.74
Interests receivable	354,613.89	-
Other receivables	660,401,623.39	351,417,281.49
Inventories	24,161,481,865.09	12,934,503,761.70
Non-current assets due within one year	234,004,518.64	57,859,251.81
Other current assets	531,634,009.52	380,288,005.58
Total current assets	<u>51,369,133,139.74</u>	<u>43,971,721,306.96</u>
Non-current assets		
Available-for-sale financial assets	219,803,255.62	75,364,358.60
Long-term receivable	470,167,068.19	151,675,332.60
Long-term equity investments	1,187,080,210.51	854,162,112.76
Investment property	97,527,008.99	81,006,787.36
Fixed assets	11,805,022,168.74	9,335,159,281.28
Construction in progress	3,895,379,234.72	2,098,151,308.89
Construction materials	665,401,737.24	528,913,537.21
Intangible assets	6,716,207,109.25	6,064,451,317.37
Development costs	8,620,259.08	6,933,037.24
Long-term deferred expenses	7,964,861.08	8,562,473.93
Deferred tax assets	167,073,979.30	165,000,706.64
Other non-current assets	552,822,290.60	-
Total non-current assets	<u>25,793,069,183.32</u>	<u>19,369,380,253.88</u>
Total assets	<u><u>77,162,202,323.06</u></u>	<u><u>63,341,101,560.84</u></u>



China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2010 (continued)  
*(Expressed in renminbi yuan)*

Liabilities and shareholders' equity	<u>2010</u>	<u>2009</u>
<b>Current liabilities</b>		
Short-term loans	1,237,870,292.59	3,432,545,076.05
Financial liabilities held for trading	61,926,951.02	-
Bills payable	6,849,419,876.54	5,120,855,748.86
Accounts payable	16,517,809,154.20	11,827,640,172.34
Advances from customers	17,583,254,781.60	14,389,147,428.81
Employee benefits payable	883,201,170.04	959,564,269.33
Taxes payable	693,635,747.37	339,815,691.23
Interest payable	41,922,990.04	4,494,234.03
Dividends payable	149,966,482.42	125,541,743.45
Other payables	1,597,456,504.47	1,455,623,286.63
Non-current liabilities due within one year	60,000,000.00	100,000,000.00
Provisions	378,960,413.86	158,247,216.24
Other current liabilities	4,009,003,448.35	-
<b>Total current liabilities</b>	<u>50,064,427,812.50</u>	<u>37,913,474,866.97</u>
<b>Non-current liabilities</b>		
Long-term loans	22,365,499.32	920,082,620.01
Long-term payables	2,114,825,063.99	2,353,369,155.18
Special payable	13,303,439.00	29,842,560.79
Deferred tax liabilities	14,613,594.01	-
Other non-current liabilities	798,126,432.88	492,774,420.77
<b>Total non-current liabilities</b>	<u>2,963,234,029.20</u>	<u>3,796,068,756.75</u>
<b>Total liabilities</b>	<u>53,027,661,841.70</u>	<u>41,709,543,623.72</u>

China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2010 (continued)  
(Expressed in renminbi yuan)

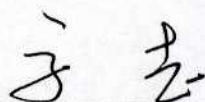
Liabilities and shareholders' equity (continued)	2010	2009
Shareholders' equity		
Share capital	8,300,000,000.00	8,300,000,000.00
Capital reserve	11,024,776,036.26	10,937,931,681.35
Surplus reserve	152,458,488.72	96,287,684.65
Retained earnings	3,433,880,626.30	1,750,793,362.85
Total equity attributable to shareholders of the Company	22,911,115,151.28	21,085,012,728.85
Minority interests	1,223,425,330.08	546,545,208.27
Total shareholders' equity	24,134,540,481.36	21,631,557,937.12
Total liabilities and shareholders' equity	77,162,202,323.06	63,341,101,560.84

These financial statements have been approved by the Board of Directors of the Company on 6 April 2011.

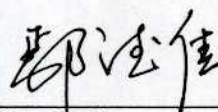


Cui Dianguo  
Legal Representative

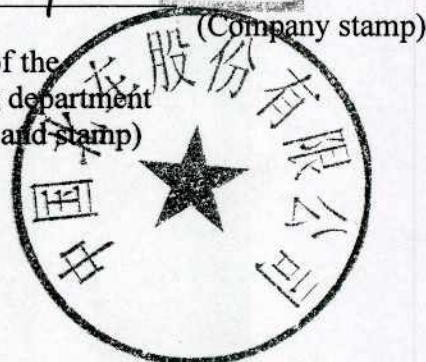
(Signature and stamp)

Gao Zhi  
The person in charge of  
accounting affairs  
(Signature and stamp)

Yan Dejia  
The head of the  
accounting department  
(Signature and stamp)





China CNR Corporation Limited  
Balance sheet as at 31 December 2010  
(Expressed in renminbi yuan)

Assets	<u>2010</u>	<u>2009</u>
Current assets		
Cash at bank and on hand	350,220,881.91	6,946,463,327.34
Accounts receivable	5,562,400.00	10,798,738.55
Prepayments	19,912,489.74	17,175,691.51
Dividends receivable	241,547,378.01	144,848,741.84
Interest receivable	15,316,738.22	14,444,724.10
Other receivables	155,926,930.11	433,642.62
Inventories	14,263,720.74	4,672,323.41
Non-current assets due within one year	370,430,000.00	132,690,000.00
Other current assets	5,374,353,274.02	3,443,189,086.30
Total current assets	<u>6,547,533,812.75</u>	<u>10,714,716,275.67</u>
Non-current assets		
Long-term equity investments	18,962,582,780.27	14,317,319,716.25
Fixed assets	29,723,423.76	18,724,050.27
Construction in progress	37,000.00	-
Intangible assets	16,139,290.96	1,092,598.62
Deferred tax assets	3,292,893.05	618,229.48
Other non-current assets	3,406,300,000.00	1,550,410,000.00
Total non-current assets	<u>22,418,075,388.04</u>	<u>15,888,164,594.62</u>
Total assets	<u><u>28,965,609,200.79</u></u>	<u><u>26,602,880,870.29</u></u>

China CNR Corporation Limited  
Balance sheet as at 31 December 2010 (continued)  
*(Expressed in renminbi yuan)*

Liabilities and shareholders' equity	<u>2010</u>	<u>2009</u>
Current liabilities		
Short-term loans	1,800,000,000.00	2,940,000,000.00
Accounts payable	4,322,154.39	3,902,385.09
Advances from customers	63,581,619.68	151,488.00
Employee benefits payable	12,734,985.41	2,040,658.93
Taxes payable	11,740,967.58	48,565,808.61
Interest payable	40,187,474.20	4,276,800.00
Other payables	74,053,282.49	98,369,227.19
Non-current liabilities due within one year	60,000,000.00	100,000,000.00
Other current liabilities	3,991,649,923.90	-
Total current liabilities	<u>6,058,270,407.65</u>	<u>3,197,306,367.82</u>
Non-current liabilities		
Long-term loans	-	890,000,000.00
Other non-current liabilities	2,179,300.00	6,123,050.00
Total non-current liabilities	<u>2,179,300.00</u>	<u>896,123,050.00</u>
Total liabilities	<u>6,060,449,707.65</u>	<u>4,093,429,417.82</u>



China CNR Corporation Limited  
Balance sheet as at 31 December 2010 (continued)  
(Expressed in renminbi yuan)

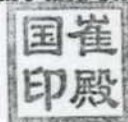
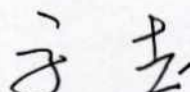
Liabilities and shareholders' equity (continued)	<u>2010</u>	<u>2009</u>
Shareholders' equity		
Share capital	8,300,000,000.00	8,300,000,000.00
Capital reserve	13,801,285,273.22	13,801,285,273.22
Surplus reserve	152,458,488.72	96,287,684.65
Retained earnings	651,415,731.20	311,878,494.60
Total shareholders' equity	<u>22,905,159,493.14</u>	<u>22,509,451,452.47</u>
Total liabilities and shareholders' equity	<u>28,965,609,200.79</u>	<u>26,602,880,870.29</u>

These financial statements have been approved by the Board of Directors of the Company on 6 April 2011.



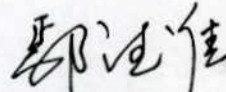
Cui Dianguo  
Legal Representative

(Signature and stamp)

Gao Zhi  
The person in charge of  
accounting affairs

(Signature and stamp)

Yan Dejie  
The head of the  
accounting department

(Signature and stamp)



(Company stamp)



China CNR Corporation Limited  
Consolidated income statement for the year ended 31 December 2010  
*(Expressed in renminbi yuan)*

	<u>2010</u>	<u>2009</u>
Operating income	62,184,321,180.25	40,515,921,752.11
Less: Operating costs	53,943,005,503.18	35,445,123,374.32
Business taxes and surcharges	179,062,262.20	109,390,853.70
Selling and distribution expenses	1,109,468,997.29	577,602,402.99
General and administrative expenses	4,618,419,815.57	3,266,460,495.66
Financial expenses	384,177,522.68	363,883,606.34
Impairment loss	84,535,238.91	4,508,332.84
Loss from changes in fair value	41,131,743.45	-
Add: Investment income	137,273,154.79	489,545,998.49
(Including: Income from investment in associates and jointly controlled enterprises)	271,651,032.49	252,562,036.37
Operating profit	<u>1,961,793,251.76</u>	<u>1,238,498,684.75</u>
Add: Non-operating income	467,823,137.19	424,719,966.10
Less: Non-operating expenses	96,860,363.83	54,512,592.22
(Including: Losses from disposal of non-current assets)	38,668,760.13	24,075,058.95
Profit before income tax	<u>2,332,756,025.12</u>	<u>1,608,706,058.63</u>
Less: Income tax expenses	303,084,818.80	195,195,968.01
Net profit for the year	<u><u>2,029,671,206.32</u></u>	<u><u>1,413,510,090.62</u></u>
Attributable to:		
Shareholders of the Company	1,909,088,883.16	1,315,559,937.68
Minority interests	120,582,323.16	97,950,152.94
Other comprehensive income for the year	85,110,263.83	(52,212,870.87)
Total comprehensive income for the year	<u><u>2,114,781,470.15</u></u>	<u><u>1,361,297,219.75</u></u>
Attributable to:		
Shareholders of the Company	1,994,199,146.99	1,263,347,066.81
Minority interests	120,582,323.16	97,950,152.94
Earnings per share		
Basic earnings per share	0.23	0.23
Diluted earnings per share	N/A	N/A



China CNR Corporation Limited  
Income statement for the year ended 31 December 2010  
*(Expressed in renminbi yuan)*

	<u>2010</u>	<u>2009</u>
Operating income	175,536,379.33	510,138,059.41
Less: Operating costs	151,455,759.51	376,736,107.21
Business taxes and surcharges	15,705,441.08	3,357,753.47
Selling and distribution expenses	1,026,492.40	-
General and administrative expenses	201,725,606.26	73,319,519.27
Financial expenses	(285,202,632.43)	(30,733,068.27)
Impairment loss	(1,950.00)	1,950.00
Add: Investment income	481,989,959.79	277,716,492.01
(Including: Income from investment in associates and jointly controlled enterprises)	19,393,753.90	16,128,390.99
Operating profit	<u>572,817,622.30</u>	<u>365,172,289.74</u>
Add: Non-operating income	254,220.00	223,960.00
Less: Non-operating expenses	212,130.00	95,195.00
(Including: Losses from disposal of non-current assets)	-	95,195.00
Profit before income tax	<u>572,859,712.30</u>	<u>365,301,054.74</u>
Less: Income tax expenses	11,151,671.63	18,769,394.07
Net profit for the year	<u><u>561,708,040.67</u></u>	<u><u>346,531,660.67</u></u>
Other comprehensive income for the year	-	-
Total comprehensive income for the year	<u><u>561,708,040.67</u></u>	<u><u>346,531,660.67</u></u>



China CNR Corporation Limited

Consolidated cash flow statement for the year ended 31 December 2010

(Expressed in renminbi yuan)

	<u>2010</u>	<u>2009</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	73,852,577,040.98	46,192,655,273.20
Refund of taxes	369,481,301.39	222,054,824.05
Cash received relating to other operating activities	889,625,956.86	1,134,529,572.72
Sub-total of cash inflows	<u>75,111,684,299.23</u>	<u>47,549,239,669.97</u>
Cash paid for goods and services	(65,564,526,586.05)	(39,565,959,293.89)
Cash paid to and for employees	(5,343,615,233.61)	(4,167,417,061.12)
Cash paid for all types of taxes	(1,787,818,343.32)	(1,583,060,731.60)
Cash paid relating to other operating activities	(1,510,815,540.58)	(1,307,768,696.38)
Sub-total of cash outflows	<u>(74,206,775,703.56)</u>	<u>(46,624,205,782.99)</u>
Net cash inflow from operating activities	<u>904,908,595.67</u>	<u>925,033,886.98</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	52,640,811.00	342,338,145.58
Cash received from return on investments	104,220,643.60	110,258,118.54
Net cash received from disposal of fixed assets, intangible assets and other long-term assets	75,286,702.82	87,984,093.14
Cash received relating to other investing activities	214,419,257.96	-
Sub-total of cash inflows	<u>446,567,415.38</u>	<u>540,580,357.26</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(7,278,624,849.85)	(3,286,579,075.09)
Cash paid for acquisition of investments	(290,407,000.33)	(96,860,813.53)
Net cash paid for acquisition of subsidiaries	(25,678,685.74)	(301,554,200.00)
Sub-total of cash outflows	<u>(7,594,710,535.92)</u>	<u>(3,684,994,088.62)</u>
Net cash outflow from investing activities	<u>(7,148,143,120.54)</u>	<u>(3,144,413,731.36)</u>



China CNR Corporation Limited  
Consolidated cash flow statement for the year ended 31 December 2010  
(continued)  
*(Expressed in renminbi yuan)*

	<u>2010</u>	<u>2009</u>
<b>Cash flows from financing activities:</b>		
Cash received from investors	30,634,091.08	13,644,588,676.91
(Including: Cash received from minority shareholders of subsidiaries)	28,900,000.00	3,996,676.91
Cash received from borrowings and issuance of debentures	27,228,645,188.48	18,958,649,877.26
Cash received relating to other financing activities	-	11,156,033.06
Sub-total of cash inflows	<u>27,259,279,279.56</u>	<u>32,614,394,587.23</u>
Cash repayments of borrowings	(26,564,891,516.19)	(20,758,236,717.10)
Cash paid for dividends, profits distribution or interest (Including: Dividends and profits paid to minority shareholders of subsidiaries)	(475,010,545.91)	(672,472,598.09)
Cash paid relating to other financing activities	(54,564,281.25)	(50,914,795.32)
	(21,788,500.00)	(68,296,401.74)
Sub-total of cash outflows	<u>(27,061,690,562.10)</u>	<u>(21,499,005,716.93)</u>
<b>Net cash inflow from financing activities</b>	<u>197,588,717.46</u>	<u>11,115,388,870.30</u>
<b>Effect of foreign exchange rate changes on cash and cash equivalents</b>	15,091,742.32	(322,809.28)
<b>Net (decrease)/increase in cash and cash equivalents</b>	<u>(6,030,554,065.09)</u>	<u>8,895,686,216.64</u>
<b>Add: cash and cash equivalents at the beginning of the year</b>	11,196,713,978.07	2,301,027,761.43
<b>Cash and cash equivalents at the end of the year</b>	<u><u>5,166,159,912.98</u></u>	<u><u>11,196,713,978.07</u></u>



China CNR Corporation Limited  
Cash flow statement for the year ended 31 December 2010  
(Expressed renminbi yuan)

	<u>2010</u>	<u>2009</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	263,602,126.95	582,322,008.53
Cash received relating to other operating activities	22,086,622.77	57,996,658.57
Sub-total of cash inflows	<u>285,688,749.72</u>	<u>640,318,667.10</u>
Cash paid for goods and services	(288,287,481.65)	(449,114,240.93)
Cash paid to and for employees	(43,670,364.82)	(34,547,773.18)
Cash paid for all types of taxes	(71,809,023.66)	(1,066,962.15)
Cash paid relating to other operating activities	(198,578,353.34)	(34,661,766.11)
Sub-total of cash outflows	<u>(602,345,223.47)</u>	<u>(519,390,742.37)</u>
<b>Net cash (outflow)/inflow from operating activities</b>	<u>(316,656,473.75)</u>	<u>120,927,924.73</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	23,505,880,000.00	13,473,880,000.00
Cash received from return on investments	853,268,869.57	874,185,795.66
Net cash received from disposal of fixed assets, intangible assets and other long-term assets	-	60,000.00
Sub-total of cash inflows	<u>24,359,148,869.57</u>	<u>14,348,125,795.66</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(32,095,694.25)	(18,207,585.67)
Cash paid for acquisition of investments	(31,718,279,260.12)	(18,934,420,000.00)
Net cash paid for acquisition of subsidiaries	(450,080,050.00)	(301,554,200.00)
Cash paid relating to other investing activities	-	(98,397,881.89)
Sub-total of cash outflows	<u>(32,200,455,004.37)</u>	<u>(19,352,579,667.56)</u>
<b>Net cash outflow from investing activities</b>	<u>(7,841,306,134.80)</u>	<u>(5,004,453,871.90)</u>



China CNR Corporation Limited

Cash flow statement for the year ended 31 December 2010 (continued)

(Expressed in renminbi yuan)

	<u>2010</u>	<u>2009</u>
<b>Cash flows from financing activities:</b>		
Cash received from investors	-	13,640,592,000.00
Cash received from borrowings and issuance of debentures	25,496,000,000.00	17,063,000,000.00
Cash received relating to other financing activities	-	8,490,000.00
Sub-total of cash inflows	<u>25,496,000,000.00</u>	<u>30,712,082,000.00</u>
Cash repayments of borrowings	(23,580,000,000.00)	(19,200,000,000.00)
Cash paid for dividends, profits distribution or interest	(332,491,336.88)	(603,575,111.80)
Cash paid relating to other financing activities	(21,788,500.00)	(68,295,911.46)
Sub-total of cash outflows	<u>(23,934,279,836.88)</u>	<u>(19,871,871,023.26)</u>
Net cash inflow from financing activities	<u>1,561,720,163.12</u>	<u>10,840,210,976.74</u>
Effect of foreign exchange rate changes on cash and cash equivalents	-	-
Net (decrease)/increase in cash and cash equivalents	<u>(6,596,242,445.43)</u>	<u>5,956,685,029.57</u>
Add: cash and cash equivalents at the beginning of the year	6,946,463,327.34	989,778,297.77
Cash and cash equivalents at the end of the year	<u><u>350,220,881.91</u></u>	<u><u>6,946,463,327.34</u></u>

China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2010					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
Balance at 31 December 2009	8,300,000,000.00	10,937,931,681.35	96,287,684.65	1,750,793,362.85	21,085,012,728.85	21,631,557,937.12
add: Changes in accounting policies	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-
Balance at 1 January 2010	8,300,000,000.00	10,937,931,681.35	96,287,684.65	1,750,793,362.85	21,085,012,728.85	21,631,557,937.12
Changes in equity for the year	-	86,844,354.91	56,170,804.07	1,683,087,263.45	1,826,102,422.43	2,502,982,544.24
I Net profit for the year	-	-	-	1,909,088,883.16	1,909,088,883.16	2,029,671,206.32
II Other comprehensive income	-	85,110,263.83	-	-	85,110,263.83	85,110,263.83
Sub-total of I&II	-	85,110,263.83	-	1,909,088,883.16	1,994,199,146.99	2,114,781,470.15
III Shareholders' contributions and decrease of capital	-	1,734,091.08	-	-	1,734,091.08	639,803,217.10
i. Contribution by shareholders	-	-	-	-	-	669,619,545.28
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	1,734,091.08	-	-	1,734,091.08	(29,816,328.18)



China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2010					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	56,170,804.07	(226,001,619.71)	(169,830,815.64)	(81,771,327.37)
i. Appropriation for surplus reserve	-	-	56,170,804.07	(56,170,804.07)	-	-
-- Legal surplus reserve	-	-	56,170,804.07	(56,170,804.07)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(166,000,000.00)	(166,000,000.00)	(78,941,205.14)
iii. Others	-	-	-	(3,830,815.64)	(3,830,815.64)	(2,830,122.23)
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2010	8,300,000,000.00	11,024,776,036.26	152,458,488.72	3,433,880,626.30	22,911,115,151.28	24,134,540,481.36



China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2009						
	Attributable to shareholders of the Company						Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	Minority interests	
Balance at 31 December 2008	5,800,000,000.00	(62,072,628.37)	61,634,518.58	718,137,273.79	6,517,699,164.00	499,587,533.10	7,017,286,697.10
add: Changes in accounting policies	-	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-	-
Others	-	300,000,000.00	-	1,554,976.60	301,554,976.60	-	301,554,976.60
Balance at 1 January 2009	5,800,000,000.00	237,927,371.63	61,634,518.58	719,692,250.39	6,819,254,140.60	499,587,533.10	7,318,841,673.70
Changes in equity for the year	2,500,000,000.00	10,700,004,309.72	34,653,166.07	1,031,101,112.46	14,265,758,588.25	46,957,675.17	14,312,716,263.42
I Net profit for the year	-	-	-	1,315,559,937.68	1,315,559,937.68	97,950,152.94	1,413,510,090.62
II Other comprehensive income	-	(52,212,870.87)	-	-	(52,212,870.87)	-	(52,212,870.87)
Sub-total of I&II	-	(52,212,870.87)	-	1,315,559,937.68	1,263,347,066.81	97,950,152.94	1,361,297,219.75
III Shareholders' contributions and decrease of capital	2,500,000,000.00	10,752,217,180.59	-	-	13,252,217,180.59	(1,241,534.91)	13,250,975,645.68
i. Contribution by shareholders	2,500,000,000.00	11,042,924,626.23	-	-	13,542,924,626.23	5,310,000.00	13,548,234,626.23
ii. Equity settled share-based payment	-	-	-	-	-	-	-
iii. Others	-	(290,707,445.64)	-	-	(290,707,445.64)	(6,551,534.91)	(297,258,980.55)



China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
*(Expressed in renminbi yuan)*

Items	2009					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	34,653,166.07	(284,458,825.22)	(249,805,659.15)	(299,556,602.01)
i. Appropriation for surplus reserve	-	-	34,653,166.07	(34,653,166.07)	-	-
-- Legal surplus reserve	-	-	34,653,166.07	(34,653,166.07)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(246,538,074.35)	(246,538,074.35)	(294,110,627.34)
iii. Others	-	-	-	(3,267,584.80)	(3,267,584.80)	(5,445,974.67)
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2009	8,300,000,000.00	10,937,931,681.35	96,287,684.65	1,750,793,362.85	21,085,012,728.85	21,631,557,937.12

China CNR Corporation Limited  
Statement of changes in shareholders' equity  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2010					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
<b>Balance at 31 December 2009</b>	8,300,000,000.00	13,801,285,273.22	96,287,684.65	311,878,494.60	22,509,451,452.47	- 22,509,451,452.47
<b>Changes in equity for the year</b>						
I Net profit for the period	-	-	56,170,804.07	339,537,236.60	395,708,040.67	- 395,708,040.67
II Other comprehensive income	-	-	-	561,708,040.67	561,708,040.67	- 561,708,040.67
Sub-total of I&II	-	-	-	561,708,040.67	561,708,040.67	- 561,708,040.67
III Shareholders' contributions and decrease of capital	-	-	-	-	-	-
i. Contribution by shareholders	-	-	-	-	-	-
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	-	-	-	-	-



China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2010							Minority interests	Total
	Attributable to shareholders of the Company					Subtotal			
	Share capital	Capital reserve	Surplus reserve	Retained earnings					
IV. Appropriation of profits	-	-	56,170,804.07	(222,170,804.07)	(166,000,000.00)	-	(166,000,000.00)		
i. Appropriation for surplus reserve	-	-	56,170,804.07	(56,170,804.07)	-	-	-		
-- Legal surplus reserve	-	-	56,170,804.07	(56,170,804.07)	-	-	-		
-- General surplus reserve	-	-	-	-	-	-	-		
ii. Distributions to shareholders	-	-	-	(166,000,000.00)	(166,000,000.00)	-	(166,000,000.00)		
iii. Others	-	-	-	-	-	-	-		
V. Transfers within equity	-	-	-	-	-	-	-		
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-	-		
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-	-		
iii. Loss covered by surplus reserve	-	-	-	-	-	-	-		
vi. Others	-	-	-	-	-	-	-		
Balance at 31 December 2010	8,300,000,000.00	13,801,285,273.22	152,458,488.72	651,415,731.20	22,905,159,493.14	-	22,905,159,493.14		



China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2009						Minority interests	Total
	Attributable to shareholders of the Company							
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal			
Balance at 31 December 2008	5,800,000,000.00	2,750,000,000.00	61,634,518.58	246,538,074.35	8,858,172,592.93	-	8,858,172,592.93	
Changes in equity for the year	2,500,000,000.00	11,051,285,273.22	34,653,166.07	65,340,420.25	13,651,278,859.54	-	13,651,278,859.54	
I Net profit for the period	-	-	-	346,531,660.67	346,531,660.67	-	346,531,660.67	
II Other comprehensive income	-	-	-	-	-	-	-	
Sub-total of I&II	-	-	-	346,531,660.67	346,531,660.67	-	346,531,660.67	
III Shareholders' contributions and decrease of capital	2,500,000,000.00	11,051,285,273.22	-	-	13,551,285,273.22	-	13,551,285,273.22	
i. Contribution by shareholders	2,500,000,000.00	11,042,924,626.23	-	-	13,542,924,626.23	-	13,542,924,626.23	
ii. Equity settled share-based payment	-	-	-	-	-	-	-	
iii. Others	-	8,360,646.99	-	-	8,360,646.99	-	8,360,646.99	

China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2010  
(Expressed in renminbi yuan)

Items	2009					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	34,653,166.07	(281,191,240.42)	(246,538,074.35)	(246,538,074.35)
i. Appropriation for surplus reserve	-	-	34,653,166.07	(34,653,166.07)	-	-
-- Legal surplus reserve	-	-	34,653,166.07	(34,653,166.07)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(246,538,074.35)	(246,538,074.35)	(246,538,074.35)
iii. Others	-	-	-	-	-	-
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2009	8,300,000,000.00	13,801,285,273.22	96,287,684.65	311,878,494.60	22,509,451,452.47	22,509,451,452.47





China CNR Corporation Limited

ENGLISH VERSION OF FINANCIAL STATEMENTS  
FOR THE YEAR FROM 1 JANUARY 2011 TO 31 DECEMBER 2011  
IF THERE IS ANY CONFLICT BETWEEN THE CHINESE  
AND ITS ENGLISH VERSIONS, THE CHINESE VERSION WILL PREVAIL



## **AUDITORS' REPORT**

KPMG-A(2012)AR No.0309

All Shareholders of China CNR Corporation Limited:

We have audited the accompanying financial statements of China CNR Corporation Limited ("the Company"), which comprise the consolidated balance sheet and balance sheet as at 31 December 2011, the consolidated income statement and income statement, the consolidated cash flow statement and cash flow statement, the consolidated statement of changes in shareholders' equity and statement of changes in shareholders' equity for the year ended 31 December 2011, and notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

The Company's management is responsible for the preparation and fair presentation of these financial statements. This responsibility includes: (1) preparing these financial statements in accordance with Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China, and fairly presenting them; (2) designing, implementing and maintaining internal control which is necessary to enable that the financial statements are free from material misstatement, whether due to fraud or error.

### **Auditors' Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with China Standards on Auditing for Certified Public Accountants. Those standards require that we comply with China Code of Ethics for Certified Public Accountants, and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## AUDITORS' REPORT (CONTINUED)

KPMG-A(2012)AR No.0309

### Opinion

In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position and financial position of the Company as at 31 December 2012, and the consolidated financial performance and financial performance and the consolidated cash flows and cash flows of the Company for the year then ended in accordance with the requirements of Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China.

KPMG Huazhen

Certified Public Accountants

Registered in the People's Republic of China



Chen Yuhong

陈玉红



Beijing, the People's Republic of China

Xu Junyi

徐君祎



10 April 2012



China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Assets	<u>2011</u>	<u>2010</u>
Current assets		
Cash at bank and on hand	6,037,811	5,325,000
Trading financial assets	30,918	39,987
Bills receivable	839,314	603,246
Accounts receivable	15,928,559	10,829,705
Prepayments	7,582,292	9,923,791
Dividends receivable	62,270	3,243
Interests receivable	1,621	355
Other receivables	674,080	704,213
Inventories	31,054,409	24,441,229
Non-current assets due within one year	402,473	234,005
Other current assets	525,110	533,133
Total current assets	<u>63,138,857</u>	<u>52,637,907</u>
Non-current assets		
Available-for-sale financial assets	68,424	219,803
Long-term receivable	933,417	470,167
Long-term equity investments	1,816,379	1,293,338
Investment property	94,143	97,527
Fixed assets	15,418,031	13,254,745
Construction in progress	6,391,554	3,905,845
Construction materials	115,372	665,402
Intangible assets	8,032,962	7,117,045
Development costs	215	8,620
Long-term deferred expenses	2,642	7,965
Deferred tax assets	252,104	169,493
Other non-current assets	995,630	552,823
Total non-current assets	<u>34,120,873</u>	<u>27,762,773</u>
Total assets	<u><u>97,259,730</u></u>	<u><u>80,400,680</u></u>



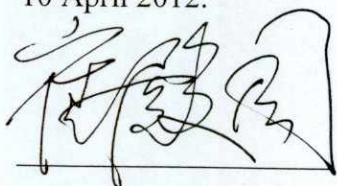
China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2011 (continued)  
*(Expressed in thousands of renminbi yuan)*

Liabilities and shareholders' equity	<u>2011</u>	<u>2010</u>
Current liabilities		
Short-term loans	10,110,520	1,457,870
Trading financial liabilities	22,046	61,927
Bills payable	8,099,667	7,053,300
Accounts payable	22,686,461	16,936,124
Advances from customers	11,339,980	17,802,073
Employee benefits payable	978,381	972,975
Taxes payable	937,875	728,689
Interest payable	224,085	43,464
Dividends payable	190,280	203,589
Other payables	2,034,457	1,757,234
Non-current liabilities due within one year	125,446	60,000
Provisions	516,761	378,960
Other current liabilities	7,987,853	4,009,003
Total current liabilities	<u>65,253,812</u>	<u>51,465,208</u>
Non-current liabilities		
Long-term loans	219,660	22,365
Long-term payables	3,071,430	2,480,992
Special payable	101,486	13,303
Deferred tax liabilities	-	14,614
Other non-current liabilities	2,321,056	1,646,148
Total non-current liabilities	<u>5,713,632</u>	<u>4,177,422</u>
Total liabilities	<u>70,967,444</u>	<u>55,642,630</u>

China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2011 (continued)  
*(Expressed in thousands of renminbi yuan)*


Liabilities and shareholders' equity (continued)	<u>2011</u>	<u>2010</u>
Shareholders' equity		
Share capital	8,300,000	8,300,000
Capital reserve	10,859,848	11,976,308
Surplus reserve	246,875	161,344
Retained earnings	5,562,328	3,103,936
Total equity attributable to shareholders of the Company	24,969,051	23,541,588
Minority interests	1,323,235	1,216,462
Total shareholders' equity	26,292,286	24,758,050
Total liabilities and shareholders' equity	97,259,730	80,400,680

These financial statements have been approved by the Board of Directors of the Company on 10 April 2012.



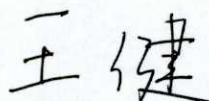
Legal Representative  
(Signature and stamp)





Chief Financial Officer  
(Signature and stamp)





Chief Accountant  
(Signature and stamp)





China CNR Corporation Limited  
Balance sheet as at 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Assets	<u>2011</u>	<u>2010</u>
Current assets		
Cash at bank and on hand	891,117	350,221
Accounts receivable	22,511	5,562
Prepayments	385,266	19,912
Dividends receivable	488,793	241,547
Interest receivable	32,403	15,317
Other receivables	254,107	155,928
Inventories	27,027	14,264
Non-current assets due within one year	539,560	370,430
Other current assets	9,986,747	5,374,353
Total current assets	<u>12,627,531</u>	<u>6,547,534</u>
Non-current assets		
Long-term equity investments	20,352,885	18,962,583
Fixed assets	45,356	29,723
Construction in progress	5,613	37
Intangible assets	52,031	16,139
Deferred tax assets	2,489	3,293
Other non-current assets	5,041,680	3,406,300
Total non-current assets	<u>25,500,054</u>	<u>22,418,075</u>
Total assets	<u><u>38,127,585</u></u>	<u><u>28,965,609</u></u>

China CNR Corporation Limited  
Balance sheet as at 31 December 2011(continued)  
*(Expressed in thousands of renminbi yuan)*

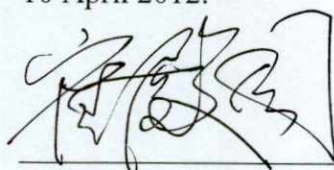
Liabilities and shareholders' equity	<u>2011</u>	<u>2010</u>
Current liabilities		
Short-term loans	6,350,000	1,800,000
Accounts payable	18,766	4,322
Advances from customers	466,237	63,582
Employee benefits payable	13,334	12,735
Taxes payable	1,781	11,741
Interest payable	209,881	40,187
Other payables	62,248	74,054
Non-current liabilities due within one year	-	60,000
Other current liabilities	7,987,853	3,991,650
Total current liabilities	<u>15,110,100</u>	<u>6,058,271</u>
Non-current liabilities		
Other non-current liabilities	4,411	2,179
Total non-current liabilities	<u>4,411</u>	<u>2,179</u>
Total liabilities	<u>15,114,511</u>	<u>6,060,450</u>



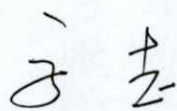
China CNR Corporation Limited  
Balance sheet as at 31 December 2011 (continued)  
(Expressed in thousands of renminbi yuan)

Liabilities and shareholders' equity (continued)	<u>2011</u>	<u>2010</u>
Shareholders' equity		
Share capital	8,300,000	8,300,000
Capital reserve	13,468,895	13,801,286
Surplus reserve	237,989	152,458
Retained earnings	1,006,190	651,415
Total shareholders' equity	<u>23,013,074</u>	<u>22,905,159</u>
Total liabilities and shareholders' equity	<u><u>38,127,585</u></u>	<u><u>28,965,609</u></u>

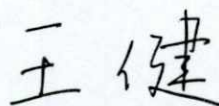
These financial statements have been approved by the Board of Directors of the Company on 10 April 2012.



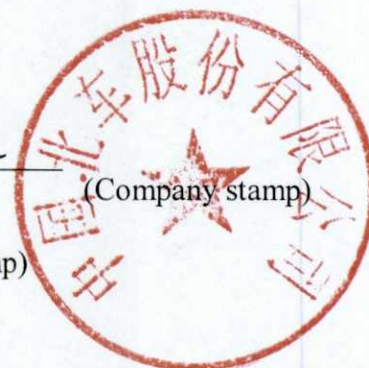
Legal Representative  
(Signature and stamp)

Chief Financial Officer  
(Signature and stamp)

Chief Accountant  
(Signature and stamp)



China CNR Corporation Limited  
Consolidated income statement for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
Operating income	89,353,178	64,322,645
Less: Operating costs	77,348,786	55,837,455
Business taxes and surcharges	298,149	180,860
Selling and distribution expenses	1,468,341	1,115,574
General and administrative expenses	5,847,180	4,753,588
Financial expenses	1,225,339	468,100
Impairment loss	252,260	87,375
(Gain)/loss on the changes of fair value of assets	(30,812)	41,132
Add: Investment income	239,234	141,672
(Including: Income from investment in associates and jointly controlled enterprises)	244,745	276,050
Operating profit	<u>3,183,169</u>	<u>1,980,233</u>
Add: Non-operating income	577,484	1,261,289
Less: Non-operating expenses	146,833	858,242
(Including: Losses from disposal of non-current assets)	18,397	39,194
Profit before income tax	<u>3,613,820</u>	<u>2,383,280</u>
Less: Income tax expenses	508,829	340,983
Net profit	<u>3,104,991</u>	<u>2,042,297</u>
Attributable to:		
Shareholders of the Company	2,985,173	1,923,905
Minority shareholders	119,818	118,392
Other comprehensive income	(112,833)	85,110
Total comprehensive income	<u>2,992,158</u>	<u>2,127,407</u>
Attributable to:		
Shareholders of the Company	2,872,340	2,009,015
Minority shareholders	119,818	118,392
Earnings per share		
Basic earnings per share	0.36	0.23
Diluted earnings per share	N/A	N/A



China CNR Corporation Limited  
Income statement for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
Operating income	130,002	175,536
Less: Operating costs	116,923	151,456
Business taxes and surcharges	13,770	15,705
Selling and distribution expenses	6,207	1,026
General and administrative expenses	207,319	201,726
Financial expenses	(237,953)	(285,203)
Impairment loss	78	(2)
Add: Investment income	828,249	481,990
(Including: Income from investment in associates and jointly controlled enterprises)	11,384	19,394
Operating profit	<u>851,907</u>	<u>572,818</u>
Add: Non-operating income	4,465	254
Less: Non-operating expenses	723	212
(Including: Losses from disposal of non-current assets)	656	-
Profit before income tax	<u>855,649</u>	<u>572,860</u>
Less: Income tax expenses	343	11,152
Net profit	<u>855,306</u> =====	<u>561,708</u> =====
Other comprehensive income	-	-
Total comprehensive income	<u>855,306</u> =====	<u>561,708</u> =====

China CNR Corporation Limited  
Consolidated cash flow statement for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	89,187,517	75,858,085
Refund of taxes	277,929	369,481
Other cash received relating to operating activities	1,740,527	1,451,065
Sub-total of cash inflows	<u>91,205,973</u>	<u>77,678,631</u>
Cash paid for goods and services	(80,189,247)	(67,204,311)
Cash paid to and for employees	(7,334,554)	(5,680,370)
Cash paid for all types of taxes	(2,962,441)	(1,823,060)
Other cash paid relating to operating activities	(3,234,418)	(1,692,144)
Sub-total of cash outflows	<u>(93,720,660)</u>	<u>(76,399,885)</u>
Net cash (outflow)/inflow from operating activities	<u>(2,514,687)</u>	<u>1,278,746</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	29,888	52,641
Cash received from return on investments	102,577	103,508
Net cash received from disposal of fixed assets, intangible assets and other long-term assets	46,221	112,221
Other cash paid relating to investing activities	105,401	214,420
Sub-total of cash inflows	<u>284,087</u>	<u>482,790</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(7,568,339)	(7,587,833)
Cash paid for acquisition of investments	(485,269)	(290,408)
Net cash paid for acquisition of subsidiary	(1,002,799)	(25,679)
Sub-total of cash outflows	<u>(9,056,407)</u>	<u>(7,903,920)</u>
Net cash outflow from investing activities	<u>(8,772,320)</u>	<u>(7,421,130)</u>



China CNR Corporation Limited  
Consolidated cash flow statement for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
<b>Cash flows from financing activities:</b>		
Cash received from investors	56,350	30,634
(Including: Cash received from minority shareholders of subsidiaries)	56,350	28,900
Cash received from borrowings and issuance of debentures	50,587,414	27,555,645
Other cash received relating to financing activities	809,045	-
Sub-total of cash inflows	<u>51,452,809</u>	<u>27,586,279</u>
Cash repayments of borrowings	(38,084,445)	(26,931,890)
Cash paid for dividends, profits distribution or interest (Including: Dividends and profits paid to minority shareholders of subsidiaries)	(1,338,655)	(499,167)
Other cash paid relating to financing activities	(64,949)	(21,789)
Sub-total of cash outflows	<u>(39,488,049)</u>	<u>(27,452,846)</u>
<b>Net cash inflow from financing activities</b>	<u>11,964,760</u>	<u>133,433</u>
<b>Effect of foreign exchange rate changes on cash and cash equivalents</b>	(27,662)	15,092
<b>Net increase/(decrease) in cash and cash equivalents</b>	650,091	(5,993,859)
<b>Add: cash and cash equivalents at the beginning of the year</b>	5,238,254	11,232,113
<b>Cash and cash equivalents at the end of the year</b>	<u>5,888,345</u>	<u>5,238,254</u>

China CNR Corporation Limited  
Cash flow statement for the year ended 31 December 2011  
*(Expressed thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	530,130	263,602
Refund of taxes	1,718	-
Other cash received relating to operating activities	181,704	22,087
Sub-total of cash inflows	<u>713,552</u>	<u>285,689</u>
Cash paid for goods and services	(569,017)	(288,287)
Cash paid to and for employees	(56,033)	(43,670)
Cash paid for all types of taxes	(29,628)	(71,809)
Other cash paid relating to operating activities	(75,310)	(198,579)
Sub-total of cash outflows	<u>(729,988)</u>	<u>(602,345)</u>
<b>Net cash outflow from operating activities</b>	<u>(16,436)</u>	<u>(316,656)</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	23,283,049	23,505,880
Cash received from return on investments	1,532,615	853,269
Net cash received from disposal of fixed assets, intangible assets and other long-term assets	165	-
Sub-total of cash inflows	<u>24,815,829</u>	<u>24,359,149</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(82,172)	(32,096)
Cash paid for acquisition of investments	(30,400,480)	(31,718,279)
Net cash paid for acquisition of subsidiary	(1,002,799)	(450,080)
Other cash paid relating to investing activities	(260,516)	-
Sub-total of cash outflows	<u>(31,745,967)</u>	<u>(32,200,455)</u>
<b>Net cash outflow from investing activities</b>	<u>(6,930,138)</u>	<u>(7,841,306)</u>



China CNR Corporation Limited  
Cash flow statement for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

	<u>2011</u>	<u>2010</u>
<b>Cash flows from financing activities:</b>		
Cash received from borrowings and issuance of debentures	40,196,000	25,496,000
Sub-total of cash inflows	<u>40,196,000</u>	<u>25,496,000</u>
Cash repayments of borrowings	(31,722,000)	(23,580,000)
Cash paid for dividends, profits distribution or interest	(971,740)	(332,491)
Other cash paid relating to financing activities	(12,000)	(21,789)
Sub-total of cash outflows	<u>(32,705,740)</u>	<u>(23,934,280)</u>
<b>Net cash inflow from financing activities</b>	<u>7,490,260</u>	<u>1,561,720</u>
<b>Effect of foreign exchange rate changes on cash and cash equivalents</b>	<u>(2,790)</u>	<u>-</u>
<b>Net increase/(decrease) in cash and cash equivalents</b>	<u>540,896</u>	<u>(6,596,242)</u>
<b>Add: cash and cash equivalents at the beginning of the year</b>	<u>350,221</u>	<u>6,946,463</u>
<b>Cash and cash equivalents at the end of the year</b>	<u>891,117</u>	<u>350,221</u>

China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity  
for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Items	2011						Minority interests	Total
	Attributable to shareholders of the Company							
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal			
Balance at 31 December 2010	8,300,000	11,976,308	161,344	3,103,936	23,541,588		1,216,462	24,758,050
add: Changes in accounting policies	-	-	-	-	-		-	-
Corrections of accounting errors	-	-	-	-	-		-	-
Balance at 1 January 2011	8,300,000	11,976,308	161,344	3,103,936	23,541,588		1,216,462	24,758,050
Changes in equity for the year	-	(1,116,460)	85,531	2,458,392	1,427,463		106,773	1,534,236
I Net profit for the year	-	-	-	2,985,173	2,985,173		119,818	3,104,991
II Other comprehensive income	-	(112,833)	-	-	(112,833)		-	(112,833)
Sub-total of I&II	-	(112,833)	-	2,985,173	2,872,340		119,818	2,992,158
III Shareholders' contributions and decrease of capital	-	(1,003,627)	-	-	(1,003,627)		54,186	(949,441)
i. Contribution by shareholders	-	-	-	-	-		56,350	56,350
ii. Equity settled share-based payment	-	-	-	-	-		-	-
iii. Others	-	(1,003,627)	-	-	(1,003,627)		(2,164)	(1,005,791)



China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Items	2011					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	85,531	(526,781)	(441,250)	(508,481)
i. Appropriation for surplus reserve	-	-	85,531	(85,531)	-	-
-- Legal surplus reserve	-	-	85,531	(85,531)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(415,000)	(415,000)	(481,976)
iii. Others	-	-	-	(26,250)	(26,250)	(26,505)
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2011	8,300,000	10,859,848	246,875	5,562,328	24,969,051	26,292,286

China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Items	2010					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
Balance at 31 December 2009	8,300,000	11,896,579	110,937	1,806,264	22,113,780	539,135
add: Changes in accounting policies	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-
Balance at 1 January 2010	8,300,000	11,896,579	110,937	1,806,264	22,113,780	539,135
Changes in equity for the year	-	79,729	50,407	1,297,672	1,427,808	677,327
I Net profit for the year	-	-	-	1,923,905	1,923,905	118,392
II Other comprehensive income	-	85,110	-	-	85,110	-
Sub-total of I&II	-	85,110	-	1,923,905	2,009,015	118,392
III Shareholders' contributions and decrease of capital	-	(5,381)	(5,764)	(400,231)	(411,376)	640,706
i. Contribution by shareholders	-	-	-	-	-	669,619
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	(5,381)	(5,764)	(400,231)	(411,376)	(28,913)
						(440,289)



China CNR Corporation Limited  
Consolidated statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
*(Expressed in thousands of renminbi yuan)*

Items	2010					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	56,171	(226,002)	(169,831)	(81,771)
i. Appropriation for surplus reserve	-	-	56,171	(56,171)	-	-
-- Legal surplus reserve	-	-	56,171	(56,171)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(166,000)	(166,000)	(78,941)
iii. Others	-	-	-	(3,831)	(3,831)	(2,830)
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2010	8,300,000	11,976,308	161,344	3,103,936	23,541,588	1,216,462
						24,758,050

China CNR Corporation Limited  
Statement of changes in shareholders' equity  
for the year ended 31 December 2011  
(Expressed in thousands of renminbi yuan)

Items	2011					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
Balance at 31 December 2010	8,300,000	13,801,286	152,458	651,415	22,905,159	-
add: Changes in accounting policies	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-
Balance at 1 January 2011	8,300,000	13,801,286	152,458	651,415	22,905,159	-
Changes in equity for the year	-	(332,391)	85,531	354,775	107,915	-
I Net profit for the year	-	-	-	855,306	855,306	-
II Other comprehensive income	-	-	-	-	-	-
Sub-total of I&II	-	-	-	855,306	855,306	-
III Shareholders' contributions and decrease of capital	-	(332,391)	-	-	(332,391)	-
i. Contribution by shareholders	-	-	-	-	-	-
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	(332,391)	-	-	(332,391)	-
						(332,391)



China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
(Expressed in thousands of renminbi yuan)

Items	2011						Minority interests	Total
	Attributable to shareholders of the Company							
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal			
IV. Appropriation of profits	-	-	85,531	(500,531)	(415,000)	-	(415,000)	
i. Appropriation for surplus reserve	-	-	85,531	(85,531)	-	-	-	
-- Legal surplus reserve	-	-	85,531	(85,531)	-	-	-	
-- General surplus reserve	-	-	-	-	-	-	-	
ii. Distributions to shareholders	-	-	-	(415,000)	(415,000)	-	(415,000)	
iii. Others	-	-	-	-	-	-	-	
V. Transfers within equity	-	-	-	-	-	-	-	
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-	-	
ii.Share capital increased by surplus reserve transfer	-	-	-	-	-	-	-	
iii.Loss covered by surplus reserve	-	-	-	-	-	-	-	
vi.Others	-	-	-	-	-	-	-	
Balance at 31 December 2011	8,300,000	13,468,895	237,989	1,006,190	23,013,074	-	23,013,074	

China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
(Expressed in thousands of renminbi yuan)

Items	2010					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
Balance at 31 December 2009	8,300,000	13,801,286	96,287	311,878	22,509,451	-
add: Changes in accounting policies	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-
Balance at 1 January 2010	8,300,000	13,801,286	96,287	311,878	22,509,451	-
Changes in equity for the year	-	-	56,171	339,537	395,708	-
I Net profit for the year	-	-	-	561,708	561,708	-
II Other comprehensive income	-	-	-	-	-	-
Sub-total of I&II	-	-	-	561,708	561,708	-
III Shareholders' contributions and decrease of capital	-	-	-	-	-	-
i. Contribution by shareholders	-	-	-	-	-	-
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	-	-	-	-	-



China CNR Corporation Limited  
Statement of changes in shareholders' equity (continued)  
for the year ended 31 December 2011  
(Expressed in thousands of renminbi yuan)

Items	2010					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	56,171	(222,171)	(166,000)	-
i. Appropriation for surplus reserve	-	-	56,171	(56,171)	-	-
-- Legal surplus reserve	-	-	56,171	(56,171)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(166,000)	(166,000)	-
iii. Others	-	-	-	-	-	-
V. Transfers within equity	-	-	-	-	-	-
i. Share capital increased by capital reserve transfer	-	-	-	-	-	-
ii. Share capital increased by surplus reserve transfer	-	-	-	-	-	-
iii. Loss covered by surplus reserve	-	-	-	-	-	-
vi. Others	-	-	-	-	-	-
Balance at 31 December 2010	8,300,000	13,801,286	152,458	651,415	22,905,159	22,905,159



China CNR Corporation Limited





China CNR Corporation Limited

ENGLISH TRANSLATION OF FINANCIAL STATEMENTS  
FOR THE YEAR 1 JANUARY 2012 TO 31 DECEMBER 2012  
IF THERE IS ANY CONFLICT BETWEEN THE CHINESE VERSION AND ITS  
ENGLISH TRANSLATION, THE CHINESE VERSION WILL PREVAIL



## **AUDITORS' REPORT**

毕马威华振审字第 1300946 号

All Shareholders of China CNR Corporation Limited:

We have audited the accompanying financial statements of China CNR Corporation Limited ("the Company"), which comprise the consolidated balance sheet and balance sheet as at 31 December 2012, the consolidated income statement and income statement, the consolidated cash flow statement and cash flow statement, the consolidated statement of changes in owners' equity and statement of changes in owners' equity for the year then ended, and notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

The Company's management is responsible for the preparation and fair presentation of these financial statements. This responsibility includes: (1) preparing these financial statements in accordance with Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China, and fairly presenting them; (2) designing, implementing and maintaining internal control which is necessary to enable that the financial statements are free from material misstatement, whether due to fraud or error.

### **Auditors' Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with China Standards on Auditing for Certified Public Accountants. Those standards require that we comply with China Code of Ethics for Certified Public Accountants, and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



## AUDITORS' REPORT (CONTINUED)

毕马威华振审字第 1300946 号

### Opinion

In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position and financial position of the Company as at 31 December 2012, and the consolidated financial performance and financial performance and the consolidated cash flows and cash flows of the Company for the year then ended in accordance with the requirements of Accounting Standards for Business Enterprises issued by the Ministry of Finance of the People's Republic of China.

KPMG Huazhen  
(Special General Partnership)



China Beijing

Certified Public Accountants  
Registered in the People's Republic of  
China

陈玉红



Chen Yuhong

雷江



Lei Jiang

9 April 2013



China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2012  
*(Expressed in Renminbi Yuan)*

	<u>2012</u>	<u>2011</u>
Assets		
Current assets		
Cash at bank and on hand	9,025,113,668.87	6,037,811,124.75
Financial assets held for trading	19,649,799.66	30,917,814.04
Bills receivable	888,014,528.67	839,313,620.17
Accounts receivable	21,829,900,522.23	15,928,558,782.91
Prepayments	5,412,862,093.73	7,582,292,067.56
Dividends receivable	24,203,763.76	62,269,818.45
Interest receivable	1,742,982.22	1,620,508.66
Other receivables	921,661,606.47	674,080,447.37
Inventories	24,646,219,938.90	31,054,409,472.98
Non-current assets due within one year	1,040,255,949.25	402,472,993.75
Other current assets	404,910,273.22	525,110,491.38
Total current assets	<u>64,214,535,126.98</u>	<u>63,138,857,142.02</u>
Non-current assets		
Available-for-sale financial assets	74,347,877.20	68,423,728.16
Long-term receivables	4,155,394,567.68	933,417,476.79
Long-term equity investments	1,854,339,880.34	1,816,378,729.65
Investment properties	96,390,388.85	94,142,857.11
Fixed assets	19,787,975,439.07	15,418,030,894.25
Construction in progress	5,270,085,604.68	6,391,554,425.76
Construction materials	101,963,773.51	115,372,409.31
Intangible assets	8,566,518,317.04	8,032,961,883.94
Development costs	-	214,592.15
Goodwill	13,557,476.77	-
Long-term deferred expenses	6,115,553.78	2,641,561.55
Deferred tax assets	286,085,039.92	252,103,804.17
Other non-current assets	2,009,294,943.42	995,630,876.33
Total non-current assets	<u>42,222,068,862.26</u>	<u>34,120,873,239.17</u>
Total assets	<u>106,436,603,989.24</u>	<u>97,259,730,381.19</u>



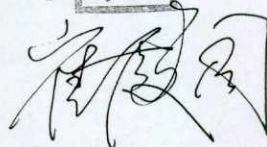
China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
Liabilities and owners' equity		
Current liabilities		
Short-term loans	5,740,600,000.00	10,110,519,769.12
Financial liabilities held for trading	9,266,527.17	22,045,827.67
Bills payable	9,692,475,197.83	8,099,666,671.48
Accounts payable	23,616,574,024.74	22,686,460,864.13
Advances from customers	6,341,884,718.20	11,339,980,019.28
Employee benefits payable	948,186,256.82	978,381,125.38
Taxes payable	1,295,884,863.08	937,875,439.36
Interest payable	205,007,454.57	224,085,433.61
Dividends payable	180,460,196.67	190,280,356.63
Other payables	2,273,498,660.22	2,034,456,523.44
Non-current liabilities due within one year	356,282,439.77	125,446,454.10
Provisions	557,678,672.09	516,760,502.23
Other current liabilities	13,984,474,429.25	7,987,852,728.50
Total current liabilities	<u>65,202,273,440.41</u>	<u>65,253,811,714.93</u>
Non-current liabilities		
Long-term loans	20,033,451.80	219,659,883.90
Long-term payables	2,080,749,661.53	3,071,430,434.30
Special payables	94,336,411.61	101,486,463.97
Other non-current liabilities	2,645,077,591.89	2,321,055,929.63
Total non-current liabilities	<u>4,840,197,116.83</u>	<u>5,713,632,711.80</u>
Total liabilities	<u>70,042,470,557.24</u>	<u>70,967,444,426.73</u>

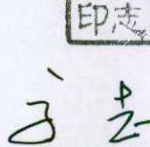
China CNR Corporation Limited  
Consolidated balance sheet as at 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	2012	2011
Liabilities and owners' equity (continued)		
Owners' equity		
Paid-in capital	10,320,056,303.00	8,300,000,000.00
Capital reserve	15,796,104,121.37	10,859,847,990.49
Surplus reserve	498,034,117.67	246,874,239.83
Specific reserve	23,814,946.77	-
General reserve	1,500,000.00	-
Retained earnings	8,175,987,391.92	5,562,328,395.40
Total equity attributable to owners of the Company	34,815,496,880.73	24,969,050,625.72
Minority interests	1,578,636,551.27	1,323,235,328.74
Total owners' equity	36,394,133,432.00	26,292,285,954.46
Total liabilities and owners' equity	106,436,603,989.24	97,259,730,381.19

These financial statements were approved by the Board of Directors of the Company on 9 April 2013.



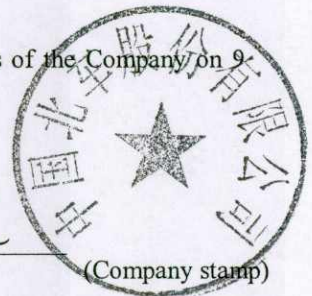
Cui Dianguo  
Legal Representative  
(Signature and stamp)



Gao Zhi  
The person in charge of accounting affairs  
(Signature and stamp)



Wang Jian  
The head of the accounting department  
(Signature and stamp)



(Company stamp)



China CNR Corporation Limited  
Balance sheet as at 31 December 2012  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
Assets		
Current assets		
Cash at bank and on hand	1,163,852,090.51	891,116,844.31
Accounts receivable	50,732,374.28	22,511,345.97
Prepayments	418,092,298.79	385,266,127.19
Dividends receivable	2,149,981,719.59	488,792,918.77
Interest receivable	41,060,329.25	32,403,058.10
Other receivables	4,276,630.25	254,106,606.35
Inventories	21,174,555.83	27,026,612.85
Non-current assets due within one year	472,505,000.00	539,560,000.00
Other current assets	9,752,687,301.54	9,986,747,390.50
Total current assets	<u>14,074,362,300.04</u>	<u>12,627,530,904.04</u>
Non-current assets		
Long-term equity investments	27,780,966,888.96	20,352,885,449.51
Fixed assets	57,306,146.99	45,355,812.38
Construction in progress	80,626,705.88	5,613,102.14
Intangible assets	79,221,794.24	52,031,064.89
Deferred tax assets	5,766,057.90	2,488,932.98
Other non-current assets	10,819,685,000.00	5,041,680,000.00
Total non-current assets	<u>38,823,572,593.97</u>	<u>25,500,054,361.90</u>
Total assets	<u>52,897,934,894.01</u>	<u>38,127,585,265.94</u>

China CNR Corporation Limited  
Balance sheet as at 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
Liabilities and owners' equity		
Current liabilities		
Short-term loans	5,900,000,000.00	6,350,000,000.00
Bills payable	9,300,000.00	-
Accounts payable	46,141,461.31	18,766,496.51
Advances from customers	322,514,430.92	466,236,789.88
Employee benefits payable	13,521,959.73	13,333,787.00
Taxes payable	2,879,868.26	1,781,210.41
Interest payable	203,582,507.61	209,880,754.76
Other payables	524,777,764.26	62,248,261.71
Other current liabilities	13,984,474,429.25	7,987,852,728.50
Total current liabilities	<u>21,007,192,421.34</u>	<u>15,110,100,028.77</u>
Non-current liabilities		
Other non-current liabilities	3,044,075.09	4,411,200.00
Total non-current liabilities	<u>3,044,075.09</u>	<u>4,411,200.00</u>
Total liabilities	<u>21,010,236,496.43</u>	<u>15,114,511,228.77</u>



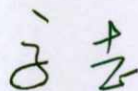
China CNR Corporation Limited  
Balance sheet as at 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
Liabilities and owners' equity (continued)		
Owners' equity		
Paid-in capital	10,320,056,303.00	8,300,000,000.00
Capital reserve	18,327,866,709.94	13,468,894,615.80
Surplus reserve	489,148,886.71	237,989,008.87
Retained earnings	2,750,626,497.93	1,006,190,412.50
Total owners' equity	<u>31,887,698,397.58</u>	<u>23,013,074,037.17</u>
Total liabilities and owners' equity	<u>52,897,934,894.01</u>	<u>38,127,585,265.94</u>

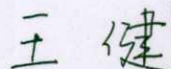
These financial statements were approved by the Board of Directors of the Company on 9 April 2013.



Cui Dianguo  
Legal Representative  
(Signature and stamp)

Gao Zhi  
The person in charge of  
accounting affairs  
(Signature and stamp)

Wang Jian  
The head of the  
accounting department  
(Signature and stamp)



China CNR Corporation Limited  
Consolidated income statement for the year ended 31 December 2012  
*(Expressed in Renminbi Yuan)*

	<u>2012</u>	<u>2011</u>
Operating income	92,431,300,503.99	89,353,178,014.15
Less: Operating costs	78,892,525,576.56	77,348,785,740.97
Business taxes and surcharges	469,017,154.36	298,148,821.80
Selling and distribution expenses	1,722,667,358.81	1,468,340,658.01
General and administrative expenses	6,673,215,294.50	5,847,179,409.10
Financial expenses	1,058,442,735.91	1,225,338,908.66
Impairment losses	234,632,537.90	252,260,432.61
Gains from changes in fair value	(1,511,286.12)	(30,811,562.50)
Add: Investment income	237,993,129.81	239,233,984.68
Including: Income from investment in associates and jointly controlled enterprises	238,625,137.71	244,745,023.91
Operating profit	3,620,304,261.88	3,183,169,590.18
Add: Non-operating income	642,389,699.37	577,484,361.04
Less: Non-operating expenses	125,471,671.58	146,833,352.36
Including: Losses from disposal of non-current assets	22,059,581.61	18,397,615.94
Profit before income tax	4,137,222,289.67	3,613,820,598.86
Less: Income tax expense	601,537,580.92	508,829,224.65
Net profit for the year	3,535,684,708.75	3,104,991,374.21
Attributable to:		
Owners of the Company	3,383,834,614.64	2,985,173,430.71
Minority interests	151,850,094.11	119,817,943.50
Other comprehensive income for the year	5,032,309.22	(112,833,451.32)
Total comprehensive income for the year	3,540,717,017.97	2,992,157,922.89
Attributable to:		
Owners of the Company	3,388,866,923.86	2,872,339,979.39
Minority interests	151,850,094.11	119,817,943.50
Earnings per share:		
Basic earnings per share	0.34	0.34
Diluted earnings per share	0.33	0.34



China CNR Corporation Limited  
Income statement for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
Operating income	370,215,007.15	130,002,476.15
Less: Operating costs	342,939,777.92	116,922,532.77
Business taxes and surcharges	19,077,189.34	13,770,309.36
Selling and distribution expenses	14,922,917.12	6,207,514.99
General and administrative expenses	244,724,839.26	207,319,036.25
Net financial income	(265,420,387.71)	(237,953,205.83)
Impairment losses	(38,375.00)	78,140.00
Add: Investment income	2,488,579,280.95	828,248,909.81
Including: (Losses)/ Income from investment in associates and jointly controlled enterprises	(7,583,243.44)	11,383,726.66
Operating profit	2,502,588,327.17	851,907,058.42
Add: Non-operating income	7,329,216.27	4,464,757.97
Less: Non-operating expenses	1,539,146.00	723,130.91
Including: Losses from disposal of non-current assets	-	656,295.88
Profit before income tax	2,508,378,397.44	855,648,685.48
Less: Income tax expense	(3,220,380.98)	343,484.03
Net profit for the year	2,511,598,778.42	855,305,201.45
Other comprehensive income for the year	-	-
Total comprehensive income for the year	2,511,598,778.42	855,305,201.45



China CNR Corporation Limited  
Consolidated cash flow statement  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	91,487,992,711.00	89,187,516,690.44
Refund of taxes	554,867,229.38	277,929,372.68
Cash received relating to other operating activities	669,102,414.94	1,740,526,597.31
Sub-total of cash inflows	<u>92,711,962,355.32</u>	<u>91,205,972,660.43</u>
Cash paid for goods and services	(75,681,051,202.25)	(80,189,247,046.68)
Cash paid to and for employees	(8,114,102,926.49)	(7,334,554,089.28)
Cash paid for all types of taxes	(4,131,525,939.93)	(2,962,441,311.43)
Cash paid relating to other operating activities	(2,880,956,670.31)	(3,234,417,669.81)
Sub-total of cash outflows	<u>(90,807,636,738.98)</u>	<u>(93,720,660,117.20)</u>
<b>Net cash inflow/(outflow) from operating activities</b>	<u>1,904,325,616.34</u>	<u>(2,514,687,456.77)</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	2,000,000.00	29,888,368.47
Cash received from return on investments	94,418,482.69	102,577,006.49
Net cash received from disposal of fixed assets, intangible assets and other long-term assets	45,081,705.74	46,220,619.65
Cash received relating to other investing activities	510,418,629.22	105,401,000.00
Sub-total of cash inflows	<u>651,918,817.65</u>	<u>284,086,994.61</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(6,098,361,147.13)	(7,568,338,956.98)
Cash paid for acquisition of investments	(559,872,302.25)	(485,268,663.74)
Net cash paid for acquisition of subsidiaries and other business units	(64,182,405.30)	(1,002,798,500.00)
Sub-total of cash outflows	<u>(6,722,415,854.68)</u>	<u>(9,056,406,120.72)</u>
<b>Net cash outflow from investing activities</b>	<u>(6,070,497,037.03)</u>	<u>(8,772,319,126.11)</u>



China CNR Corporation Limited  
Consolidated cash flow statement  
for the year ended 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
<b>Cash flows from financing activities:</b>		
Cash received from investors	7,079,314,178.26	56,350,000.00
Including: Cash received from minority shareholders of subsidiaries	200,000,000.00	56,350,000.00
Cash received from borrowings and issuance of debentures	52,002,628,467.02	50,587,413,728.26
Cash received relating to other financing activities	-	809,045,380.00
Sub-total of cash inflows	<u>59,081,942,645.28</u>	<u>51,452,809,108.26</u>
Cash repayments of borrowings	(49,694,436,878.64)	(38,084,445,118.02)
Cash paid for dividends, profit distributions or interest	(1,877,829,091.21)	(1,338,655,097.53)
Including: Dividends and profits paid to minority shareholders of subsidiaries	(624,586,517.13)	(105,741,912.03)
Cash paid relating to other financing activities	(857,211,047.37)	(64,949,159.67)
Sub-total of cash outflows	<u>(52,429,477,017.22)</u>	<u>(39,488,049,375.22)</u>
<b>Net cash inflow from financing activities</b>	<u>6,652,465,628.06</u>	<u>11,964,759,733.04</u>
<b>Effect of foreign exchange rate changes     on cash and cash equivalents</b>	<u>2,415,009.20</u>	<u>(27,662,256.65)</u>
<b>Net increase in cash and cash     equivalents</b>	<u>2,488,709,216.57</u>	<u>650,090,893.51</u>
<b>Add: cash and cash equivalents     at the beginning of the year</b>	<u>5,888,344,514.60</u>	<u>5,238,253,621.09</u>
<b>Cash and cash equivalents at the end     of the year</b>	<u>8,377,053,731.17</u>	<u>5,888,344,514.60</u>



China CNR Corporation Limited  
Cash flow statement  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
<b>Cash flows from operating activities:</b>		
Cash received from sale of goods and rendering of services	226,419,198.01	530,130,378.82
Refund of taxes	29,543,665.35	1,718,152.27
Cash received relating to other operating activities	34,027,555.81	181,703,094.86
Sub-total of cash inflows	<u>289,990,419.17</u>	<u>713,551,625.95</u>
Cash paid for goods and services	(449,644,397.53)	(569,017,362.54)
Cash paid to and for employees	(59,885,731.76)	(56,033,311.85)
Cash paid for all types of taxes	(31,276,857.17)	(29,627,679.49)
Cash paid relating to other operating activities	(93,986,108.75)	(75,309,468.26)
Sub-total of cash outflows	<u>(634,793,095.21)</u>	<u>(729,987,822.14)</u>
<b>Net cash outflow from operating activities</b>	<u>(344,802,676.04)</u>	<u>(16,436,196.19)</u>
<b>Cash flows from investing activities:</b>		
Cash received from disposal of investments	33,260,770,000.00	23,283,048,900.00
Cash received from return on investments	2,132,997,384.32	1,532,614,330.09
Net cash received from disposal of fixed assets	-	165,000.00
Cash received relating to other investing activities	71,558,571.44	-
Sub-total of cash inflows	<u>35,465,325,955.76</u>	<u>24,815,828,230.09</u>
Cash paid for acquisition of fixed assets, intangible assets and other long-term assets	(151,846,064.74)	(82,171,693.04)
Cash paid for acquisition of investments	(45,546,700,000.00)	(30,400,480,000.00)
Net cash paid for acquisition of subsidiaries and other business units	(29,770,000.00)	(1,002,798,500.00)
Cash paid relating to other investing activities	-	(260,516,388.29)
Sub-total of cash outflows	<u>(45,728,316,064.74)</u>	<u>(31,745,966,581.33)</u>
<b>Net cash outflow from investing activities</b>	<u>(10,262,990,108.98)</u>	<u>(6,930,138,351.24)</u>



China CNR Corporation Limited  
Cash flow statement  
for the year ended 31 December 2012 (continued)  
(Expressed in Renminbi Yuan)

	<u>2012</u>	<u>2011</u>
<b>Cash flows from financing activities:</b>		
Cash received from investors	6,879,314,178.26	-
Cash received from borrowings and issuance of debentures	49,391,000,000.00	40,196,000,000.00
Sub-total of cash inflows	<u>56,270,314,178.26</u>	<u>40,196,000,000.00</u>
Cash repayments of borrowings	(43,863,000,000.00)	(31,722,000,000.00)
Cash paid for dividends, profit distributions or interest	(1,512,298,091.45)	(971,739,535.54)
Cash paid relating to other financing activities	(17,673,055.63)	(12,000,000.00)
Sub-total of cash outflows	<u>(45,392,971,147.08)</u>	<u>(32,705,739,535.54)</u>
Net cash inflow from financing activities	<u>10,877,343,031.18</u>	<u>7,490,260,464.46</u>
Effect of foreign exchange rate changes on cash and cash equivalents	3,185,000.04	(2,789,954.63)
Net increase in cash and cash equivalents	<u>272,735,246.20</u>	<u>540,895,962.40</u>
Add: cash and cash equivalents at the beginning of the year	891,116,844.31	350,220,881.91
Cash and cash equivalents at the end of the year	<u>1,163,852,090.51</u>	<u>891,116,844.31</u>

China CNR Corporation Limited  
Consolidated statement of changes in owners' equity  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2012									
	Attributable to shareholders of the Company									
	Share capital	Capital reserve	Specific reserve	Surplus reserve	General reserve	Retained earnings	Subtotal	Minority interests	Total	
Balance at 31 December 2011	8,300,000,000.00	10,859,847,990.49	-	246,874,239.83	-	5,562,328,395.40	24,969,050,625.72	1,323,235,328.74	26,292,285,954.46	
add: Changes in accounting policies	-	-	-	-	-	-	-	-	-	
Corrections of accounting errors	-	-	-	-	-	-	-	-	-	
Balance at 1 January 2012	8,300,000,000.00	10,859,847,990.49	-	246,874,239.83	-	5,562,328,395.40	24,969,050,625.72	1,323,235,328.74	26,292,285,954.46	
Changes in equity for the year	2,020,056,303.00	4,934,256,130.88	23,814,946.77	251,159,877.84	1,500,000.00	2,613,658,996.52	9,846,446,255.01	255,401,222.53	10,101,847,477.54	
I Net profit for the year	-	-	-	-	-	3,383,834,614.64	3,383,834,614.64	151,850,094.11	3,535,684,708.75	
II Other comprehensive income	-	5,032,309.22	-	-	-	-	5,032,309.22	-	5,032,309.22	
Sub-total of I&II	-	5,032,309.22	-	-	-	3,383,834,614.64	3,388,866,923.86	151,850,094.11	3,540,717,017.97	
III Shareholders' contributions and decrease of capital	2,020,056,303.00	4,931,223,821.66	-	-	-	-	6,951,280,124.66	232,946,924.32	7,184,227,048.98	
i Contribution by shareholders	2,020,056,303.00	4,853,584,819.63	-	-	-	-	6,873,641,122.63	232,378,680.40	7,106,019,803.03	
ii Equity settled share-based payment	-	5,343,251.59	-	-	-	-	5,343,251.59	44,022.92	5,387,274.51	
iii Others	-	72,295,790.44	-	-	-	-	72,295,790.44	524,221.00	72,819,971.44	



China CNR Corporation Limited  
Consolidated statement of changes in owners' equity (continued)  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2012							
	Attributable to shareholders of the Company							Total
	Share capital	Capital reserve	Specific reserve	Surplus reserve	General reserve	Retained earnings	Subtotal	
IV Specific reserve	-	-	23,814,946.77	-	-	-	23,814,946.77	25,043,498.68
- Accrued	-	-	175,772,669.19	-	-	-	175,772,669.19	180,197,010.21
- Utilised	-	-	(151,957,722.42)	-	-	-	(151,957,722.42)	(155,153,511.53)
V Appropriation of profits	-	-	-	251,159,877.84	1,500,000.00	(770,175,618.12)	(517,515,740.28)	(648,140,088.09)
i. Appropriation for surplus reserve	-	-	-	251,159,877.84	-	(251,159,877.84)	-	-
-- Legal surplus reserve	-	-	-	251,159,877.84	-	(251,159,877.84)	-	-
-- General surplus reserve	-	-	-	-	-	-	-	-
ii. Appropriation for general reserve	-	-	-	-	1,500,000.00	(1,500,000.00)	-	-
iii. Distributions to shareholders	-	-	-	-	-	(516,002,815.15)	(516,002,815.15)	(645,123,042.24)
iv. Appropriation for staff and workers' bonus and welfare fund by subsidiaries	-	-	-	-	-	(1,512,925.13)	(1,512,925.13)	(3,017,045.85)
v. Distributions to original owners due to business combinations involving enterprises under common control	-	-	-	-	-	-	-	-
VI. Transfers within equity	-	-	-	-	-	-	-	-
Balance at 31 December 2012	10,320,056,303.00	15,796,104,121.37	23,814,946.77	498,034,117.67	1,500,000.00	8,175,987,391.92	34,815,496,880.73	36,394,133,432.00

China CNR Corporation Limited  
Consolidated statement of changes in owners' equity (continued)  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2011					
	Attributable to shareholders of the Company					Minority interests
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
Balance at 31 December 2011	8,300,000,000.00	11,976,308,484.93	161,343,719.68	3,103,935,872.49	23,541,588,077.10	1,216,462,284.70
add: Changes in accounting policies	-	-	-	-	-	-
Corrections of accounting errors	-	-	-	-	-	-
Balance at 1 January 2012	8,300,000,000.00	11,976,308,484.93	161,343,719.68	3,103,935,872.49	23,541,588,077.10	1,216,462,284.70
Changes in equity for the period	-	(1,116,460,494.44)	85,530,520.15	2,458,392,522.91	1,427,462,548.62	106,773,044.04
I. Net profit for the period	-	-	-	2,985,173,430.71	2,985,173,430.71	119,817,943.50
II Other comprehensive income	-	(112,833,451.32)	-	-	(112,833,451.32)	-
Sub-total of I&II	-	(112,833,451.32)	-	2,985,173,430.71	2,872,339,979.39	119,817,943.50
III Shareholders' contributions and decrease of capital	-	(1,003,627,043.12)	-	-	(1,003,627,043.12)	54,186,438.59
i. Contribution by shareholders	-	-	-	-	-	56,350,000.00
ii. Equity settled share-based payment	-	-	-	-	-	-
iii. Others	-	(1,003,627,043.12)	-	-	(1,003,627,043.12)	(2,163,561.41)
	-	-	-	-	-	(1,005,790,604.53)



China CNR Corporation Limited  
Consolidated statement of changes in owners' equity (continued)  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2011					
	Attributable to shareholders of the Company					Total
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Subtotal	
IV. Appropriation of profits	-	-	85,530,520.15	(526,780,907.80)	(441,250,387.65)	(508,481,725.70)
i. Appropriation for surplus reserve	-	-	85,530,520.15	(85,530,520.15)	-	-
-- Legal surplus reserve	-	-	85,530,520.15	(85,530,520.15)	-	-
-- General surplus reserve	-	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(415,000,000.00)	(415,000,000.00)	(481,976,131.20)
iii Appropriation for staff and workers' bonus and welfare fund by subsidiaries	-	-	-	(382,810.32)	(382,810.32)	(638,017.17)
iv. Distributions to original owners due to business combinations involving enterprises under common control	-	-	-	(25,867,577.33)	(25,867,577.33)	(25,867,577.33)
V. Transfers within equity	-	-	-	-	-	-
Balance at 31 December 2011	8,300,000,000.00	10,859,847,990.49	246,874,239.83	5,562,328,395.40	24,969,050,625.72	26,292,285,954.46

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China CNR Corporation Limited  
Statement of changes in owners' equity  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2012						
	Share capital	Capital reserve	Specific reserve	Surplus reserve	General reserve	Retained earnings	Total
IV Specific reserve	-	-	-	-	-	-	-
1. Accrued	-	-	-	-	-	-	-
2. Utilised	-	-	-	-	-	-	-
V Appropriation of profits	-	-	-	251,159,877.84	-	(767,162,692.99)	(516,002,815.15)
i. Appropriation for surplus reserve	-	-	-	251,159,877.84	-	(251,159,877.84)	-
-- Legal surplus reserve	-	-	-	251,159,877.84	-	(251,159,877.84)	-
-- General surplus reserve	-	-	-	-	-	-	-
ii. Appropriation for general reserve	-	-	-	-	-	-	-
iii. Distributions to shareholders	-	-	-	-	-	(516,002,815.15)	(516,002,815.15)
iv. Others	-	-	-	-	-	-	-
VI Transfers within equity	-	-	-	-	-	-	-
Balance at 31 December 2012	10,320,056,303.00	18,327,866,709.94	-	489,148,886.71	-	2,750,626,497.93	31,887,698,397.58

China CNR Corporation Limited  
Statement of changes in owners' equity (continued)  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2011			
	Share capital	Capital reserve	Surplus reserve	Retained earnings
Balance at 31 December 2010	8,300,000,000.00	13,801,285,273.22	152,458,488.72	651,415,731.20
Changes in equity for the period	-	(332,390,657.42)	85,530,520.15	354,774,681.30
I. Net profit for the period	-	-	-	855,305,201.45
II Other comprehensive income	-	-	-	-
Sub-total of I&II	-	-	-	855,305,201.45
III Shareholders' contributions and decrease of capital	-	(332,390,657.42)	-	-
i. Contribution by shareholders	-	-	-	-
ii. Equity settled share-based payment	-	-	-	-
iii. Others	-	(332,390,657.42)	-	-
				(332,390,657.42)
				855,305,201.45
				(332,390,657.42)
				855,305,201.45
				22,905,159,493.14



China CNR Corporation Limited  
Statement of changes in owners' equity (continued)  
for the year ended 31 December 2012  
(Expressed in Renminbi Yuan)

Items	2011				
	Share capital	Capital reserve	Surplus reserve	Retained earnings	Total
IV. Appropriation of profits	-	-	85,530,520.15	(500,530,520.15)	(415,000,000.00)
i. Appropriation for surplus reserve	-	-	85,530,520.15	(85,530,520.15)	-
-- Legal surplus reserve	-	-	85,530,520.15	(85,530,520.15)	-
-- General surplus reserve	-	-	-	-	-
ii. Distributions to shareholders	-	-	-	(415,000,000.00)	(415,000,000.00)
iii. Others	-	-	-	-	-
V. Transfers within equity	-	-	-	-	-
Balance at 31 December 2011	8,300,000,000.00	13,468,894,615.80	237,989,008.87	1,006,190,412.50	23,013,074,037.17

**Attachment 3**

**CNR MA Corporation**

**Code of Ethics and Business Conduct**

**for**

**Employees, Officers and Directors**



## **CNR MA Corporation**

### **CODE OF ETHICS AND BUSINESS CONDUCT FOR EMPLOYEES, OFFICERS AND DIRECTORS**

Our success is based on creating innovative, high-quality products and services and on demonstrating honesty and integrity in every business interaction. Our principles of business define the way we do business in U.S. and worldwide. These principles are:

- *Honesty.* Demonstrate honesty and high ethical standards in all business dealings.
- *Respect.* Treat customers, suppliers, employees, and others with respect and courtesy.
- *Excellence.* Provide a product or perform each task so that it represents our highest achievement.
- *Confidentiality.* Protect the confidentiality of our information and the information of our customers, suppliers, and employees.
- *Compliance.* Ensure that business decisions comply with all applicable laws, regulations, and ethical standards. Company employees are subject to the laws of many countries and jurisdictions around the world and are expected to act accordingly.

CNR\_MA employees should always act lawfully, ethically, and in the best interests of CNR\_MA. This Code of Ethics and Business Conduct sets out our basic guiding principles. Employees who are unsure whether their conduct or the conduct of their coworkers complies with the Code of Conduct should contact their manager.

We expect our employees, officers and directors to adhere to and promote these principles. We will deal with suppliers and partners that operate in such a manner so that they reflect these values. We look to foster a culture of transparency, integrity and excellence in our Company, which will be valued by our customers and bring pride to our employees, directors, shareholders, and the communities in which we work.

#### **1 CONFLICTS OF INTEREST**

As an employee, director or officer of the Company, it is imperative that company representatives avoid any interest or association that interferes or any interest that appears to interfere with the independent exercise of judgment in the Company's best interests. You should never exploit your position or relationship with the Company for personal gain. This applies to product purchases or sales, investment opportunities, hiring, promoting, selecting contractors or suppliers, and any other business matter.

In any potential conflict of interest situation, ask yourself:

“Could my personal interests interfere with those of the Company?”

“Might it appear that way to others, either inside or outside of the Company?”

If you have concerns about any situation, follow the steps outlined in the Section on “Reporting Violations.”

## **2 OUTSIDE EMPLOYMENT AND INVENTIONS**

Any employee (full-time or part-time) who obtains additional outside employment, has an outside business, or is working on an invention must comply with the following rules.

Do not:

- Use any time at work or any of the Company assets for your other job, outside business, or invention. This includes using the Company workspace, phones, computers, Internet access, copy machines, and any other the Company assets or services.
- Use your position at the Company to solicit work for your outside business or other employer, to obtain favored treatment, or to pressure others to assist you in working on your invention.
- Participate in an outside employment activity that could have an adverse effect on your ability to perform your duties at the Company.
- Use Confidential Information, which is defined in the Section on “Protection of the Company, Customer and Vendor Information”, to benefit your other employer, outside business, or invention.

## **3 GIFTS, BRIBES AND KICKBACKS**

Other than for modest gifts given or received in the normal course of business (including travel or entertainment), neither you nor your relatives may give gifts to, or receive gifts or entertainment from the Company’s current or potential vendors, suppliers, customers, or other business associates unless all of the following conditions are met:

- *Nominal value.* The value of the gift is less than US\$150. Exceptions must be approved by your senior supervisor and in no event should you violate any laws and regulations or embarrass the Company if the gift is publicly disclosed.
- *Customary.* The item is a customary business gift and would not embarrass the Company if publicly disclosed. Cash is never an acceptable gift. Giving or receiving cash is always against our policy.
- *No favored treatment.* The purpose of the gift is not to obtain special or favored treatment.
- *Legal.* Giving or accepting the gift is legal in the location and under the circumstances and customs where given.
- *Recipient is not a government official.* Dealing with government employees is often different than dealing with private persons. Many governmental bodies strictly prohibit the receipt of any gratuities by their employees, including meals and entertainment. Anything of value that is given to an official is often considered a gift. This includes



items such as meals, golf, entertainment, and product samples. Cash is never an acceptable gift. To prevent violations, review all gifts to government officials with the Company's legal counsel before giving a gift. In many countries, it is considered common courtesy to provide token/ceremonial gifts to government officials on certain occasions to help build relationships. Check local requirements and review any such gifts exceeding US\$25 in advance with the Company's legal counsel. For meals, the US\$25 limit does not necessarily apply. Check with the Company's legal counsel for value limits by country on meals to public officials and employees. Meals of any value should be avoided with officials from government agencies where the Company has a pending application, proposal, or other business

This policy does not preclude the Company as an organization from receiving and evaluating complimentary products or services. It is not intended to preclude the Company from giving equipment to a company or organization, provided the gift is openly given, consistent with legal requirements, and in the Company's business interests. The policy also does not preclude the attendance of the Company's employees at business-related social functions, if attendance is approved by management and does not create a conflict of interest.

#### **4 PRICING PRODUCTS SOLD TO GOVERNMENTS**

Governments should be charged the same as any product sold. Pricing should be based upon a determination of fair market based upon standard cost, profit and contract requirements.

Governments are unique customers for the Company. Governments often place special bidding, pricing, disclosure, and certification requirements on companies with which they do business. Discuss these requirements with the Company's legal counsel before bidding for government business.

#### **5 CORPORATE OPPORTUNITIES**

You are prohibited from (a) personally benefitting from information that is discovered through the use of Company property or your position; (b) competing with the Company.

#### **6 PROTECTION AND PROPER USE OF COMPANY ASSETS**

You should protect the Company's assets and ensure their efficient use. All Company assets should be used for legitimate business purposes. Every employee, director, officer, or representative must safeguard the Company's assets from loss or theft, and may not take such assets for personal gain or use.

Company assets include confidential information, software, computers, supplies, tools, equipment, rolling stock, and so forth. You must appropriately secure all Company assets within your control to prevent their unauthorized use. Employees may make limited non-business use of the Company's electronic communications systems, provided that such use (i) is occasional (ii) does not interfere with the employee's responsibilities (iii) does not diminish productivity, and (iv) does not violate this Code or the Company's electronic communications system policy then in effect.

## **7 PROTECTION OF THE COMPANY, CUSTOMER AND VENDOR INFORMATION**

You may not use or reveal Company, customer or vendor confidential or proprietary information to others. Confidential information includes all non-public information that might be of use to competitors, or harmful to the Company or its customers, if disclosed. Additionally, you must take appropriate steps - including securing documents, limiting access to computers and electronic media, and proper disposal methods - to prevent unauthorized access to such information.

## **8 FAIR DEALING**

You should always endeavor to deal fairly with the Company's customers, suppliers, competitors, and employees. No Company employee, director or officer should take unfair advantage of anyone through improper manipulation, concealment, abuse of privileged information, misrepresentation of material facts, or any other unfair-dealing practice.

## **9 FAIR COMPETITION AND ANTITRUST LAWS**

The Company must comply with all applicable fair competition and antitrust laws. These laws attempt to ensure that businesses compete fairly and honestly and prohibit conduct seeking to reduce or restrain competition. If you are uncertain whether a contemplated action raises unfair competition or antitrust issues, please contact the Company's legal counsel.

## **10 MONEY LAUNDERING**

Money laundering is the process by which individuals or organizations try to conceal illicit funds or make these funds look legitimate. If you deal directly with customers or vendors, the following examples may be indications of potential money laundering:

- Attempts to make large payments in cash
- Payments by someone who is not a party to the contract
- Requests to pay more than provided for in the contract
- Payments made in currencies other than those specified in the contract
- Payments from an unusual, nonbusiness account

If you suspect money laundering, advise your manager or contact President.

## **11 TRADE RESTRICTIONS AND EXPORT CONTROLS**

Many countries periodically impose restrictions on exports and other dealings with certain other countries, persons, or groups. Export laws may control trading of commodities or technologies that are considered to be strategically important because they have the potential to be used for military purposes. Laws may cover travel to or from a sanctioned country, imports or exports, new investments, and other related topics. Certain laws also prohibit support of boycott activities.

If your work involves the sale or shipment of products, technologies, or services across international borders, check to ensure compliance with any laws or restrictions that apply with the Company's legal counsel.



## **12 DOCUMENT RETENTION AND LEGAL HOLD**

As an employee, you have a responsibility to manage documents and/or make decisions on document retention. The definition of “document” is extremely broad. For example, every email or other electronic file, every customer record, and every transaction involves the creation of a document. Different documents have different retention periods. Check with your manager to determine the appropriate retention period for documents in your area.

In a litigation case or other legal matter, the Company may be required to produce documents. In these cases the legal counsel may put a legal hold on certain documents to prevent the documents from being destroyed, altered, or modified. If it is found that the Company has failed to retain or produce required documents, penalties or adverse rulings may result. In these situations, retention and preservation of documents is critical. If you have documents that may be required for litigation or other legal matters, the legal counsel will place those documents on a legal hold, meaning the documents cannot be altered, destroyed, deleted, or modified in any manner. Legal will notify the individuals most closely identified with the documents about the legal hold and will provide instructions for retaining the documents. Recipients of a legal hold must ensure that these instructions are followed. A legal hold remains in effect until you are notified by the legal counsel in writing.

Failure of employees to retain and preserve documents placed on legal hold may result in discipline or discharge.

## **13 ACCURATE FINANCIAL STATEMENTS**

You should exercise the highest standard of care in contributing to or preparing financial statements and disclosure containing such financial statements as required by governmental authorities in accordance with the following guidelines:

- All the Company accounting records, as well as reports produced from those records, must be in accordance with the laws of each applicable jurisdiction.
- All records must fairly and accurately reflect the transactions or occurrences to which they relate.
- All records must fairly and accurately reflect, in reasonable detail, the Company’s assets, liabilities, revenues and expenses.
- The Company’s accounting records must not contain any false or intentionally misleading entries.
- No transactions should be intentionally misclassified as to accounts, departments or accounting periods.
- All transactions must be supported by accurate documentation in reasonable detail and recorded in the proper account and in the proper accounting period.
- No information should be concealed from the internal auditors or the independent auditors.
- Compliance with the Company’s system of internal accounting controls is required.

## **14 COMPLIANCE WITH LAW**

You are expected to comply with both the letter and spirit of all applicable governmental laws, rules and regulations. If you fail to comply with this Code and/or with any applicable laws, you will be subject to disciplinary measures, up to and including immediate discharge from the Company.

## **15 REPORTING VIOLATIONS**

Your conduct does reinforce an ethical atmosphere and positively influence the conduct of fellow employees. If you are unable to stop suspected misconduct or discover it after it has occurred, you must report it to the appropriate level of management at your location. Misconduct cannot be excused because it was directed or requested by another. In this regard, you are expected to alert management whenever an illegal, dishonest or unethical act is discovered or suspected.

If you are still concerned after speaking with your local management or feel uncomfortable speaking with them for whatever reason, you must (anonymously, if you wish) send a detailed note, with relevant documents, to the Company's legal counsel. Your calls, detailed notes and/or emails will be dealt with confidentially. We will make every effort to keep you informed about the action taken to address your concern.

You will not be penalized, dismissed, demoted or suspended and no retaliatory action will be taken against anyone for reporting or inquiring in good faith about potential breaches of the Code or for seeking guidance on how to handle suspected breaches.

## **16 ENVIRONMENT, HEALTH, AND SAFETY (EHS)**

We operate in a manner that conserves the environment and protects the safety and health of our employees, our customers, and our communities. Conduct your job safely and consistently with applicable EHS requirements and in accordance with local, state and federal requirements. Use good judgment and always put the environment, health, and safety first. Be proactive in anticipating and dealing with EHS risks.

## **17 HARASSMENT AND DISCRIMINATION**

We encourage a creative, culturally diverse, and supportive work environment. We do not tolerate harassment or discrimination based on factors such as race, color, sex, sexual orientation, gender identity characteristics or expression, religion, national origin, age, marital status, disability, medical condition, veteran status, or pregnancy. Additional restrictions may apply based on regional laws and regulations.

These requirements apply to interactions with employees, customers, suppliers, and applicants for employment and any other interactions where you represent the Company.

If you feel that you have been harassed or discriminated against or have witnessed such behavior, you have a responsibility to report the situation.

## **18 WORKPLACE RELATIONSHIPS**

Personal relationships in the workplace may present an actual or perceived conflict of interest when one individual in the relationship is in a position to make or influence employment decisions regarding the other. If you find yourself in such a relationship, you must notify Human



Resources so they may assist you in resolving any potential conflicts. Employees cannot allow their relationships to disrupt the workplace or interfere with their work or judgment.

As a company, we strive to be open and direct. We seek to promote a challenging work environment that develops and respects our diverse workforce. In this manner, we seek to manage performance fairly, and we seek to recognize performance and reward accomplishments.

## **19 CONFIDENTIAL EMPLOYEE INFORMATION**

As part of your job, you may have access to personal information regarding other Company employees or applicants, including information regarding their employment history, personal contact information, compensation, health information, or performance and disciplinary matters. This information is confidential and can be shared only with those who have a business need to know. It should not be shared outside the Company unless there is a legal or business reason to share the information.

## **20 PERSONAL INFORMATION**

Limited personal use of the Company equipment and systems is allowed. However the Company may monitor equipment and systems. You should not have any expectation about the privacy of content or personal information.

Subject to rules or regulations affecting an employee's rights, the Company may monitor or search its work environments, including equipment, networks, mail, and electronic systems, without notice. The Company monitors facilities and equipment to promote safety, prevent unlawful activity, investigate misconduct, manage information systems, comply with legal guidelines, and for other business purposes.

## **21 PUBLIC SPEAKING AND PRESS INQUIRIES**

All public speaking engagements that relate to the Company's business or products must be pre-approved. If you receive approval to make a public presentation at a business meeting or conference, you may not request or accept any form of personal compensation from the organization that requested the presentation. This does not prohibit accepting reimbursement for expenses, if approved by your manager.

## **22 PUBLISHING ARTICLES**

If you author an article or other publication, do not identify yourself in the publication as a Company employee without prior approval from the Company. In addition, all publications that relate to your job, or to the Company's present or reasonably anticipated future products, business, or services, must be pre-approved by the Company management.

## **23 SUBSTANCE ABUSE**

Employees are prohibited from manufacturing, distributing, dispensing, possessing, using, or being under the influence of illegal drugs in the workplace. Use of alcohol or medications on the job or before work can cause safety issues, damage customer relations, and hurt productivity and innovation. Use good judgment and keep in mind that you are expected to perform to your full ability when working for the Company.

## **24 CHARITABLE DONATIONS**

Employees are encouraged to support charitable causes of their choice, as long as that support is provided without the use or furnishing of the Company's assets (including employee work time,

or use of the Company's premises, equipment, or funds). Any charitable donations involving the Company assets require pre- approval.

## **25 COMMUNITY ACTIVITIES AND PUBLIC POSITIONS**

We comply with all laws and regulations and operate in ways that benefit the communities in which we conduct business. We encourage you to uphold this commitment to the community in all your activities.

If you hold an elected or appointed public office while employed at the Company, you should recuse yourself from involvement in any decisions that might create or appear to create a conflict of interest.

## **26 POLITICAL CONTRIBUTIONS**

It is the company policy that we do not make political contributions to individual candidates. Employees may not use the Company assets (including employee work time, or use the Company premises, equipment, or funds) to personally support candidates and campaigns.

## **27 CONCLUSION**

In the final analysis YOU are the guardian of the Company's ethics. While there are no universal rules, when in doubt ask yourself:

- Am I willing to defend my actions or lack of actions in public, in front of my peers, and my family?

Any employee who ignores or violates any of the Company's ethical standards, and any manager who penalizes a subordinate for trying to follow these ethical standards, will be subject to corrective action. However, it is not the threat of discipline that should govern your actions. We expect you to share our belief that a dedicated commitment to ethical behavior is the right thing to do and is good business, as well as being the surest way for the Company to remain a world class organization. Each employee is to be held personally accountable for his actions or lack of action. With personal accountability, we can become what we value and what we strive to be.





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## 审计报告

KPMG-A(2011)AR No.0208

长春轨道客车股份有限公司董事会:

我们审计了后附的第 1 页至第 103 页的长春轨道客车股份有限公司(以下简称“贵公司”)财务报表,包括 2010 年 12 月 31 日的合并资产负债表和资产负债表、2010 年度的合并利润表和利润表、合并所有者权益变动表和所有者权益变动表、合并现金流量表和现金流量表以及财务报表附注。

### 一、贵公司管理层对财务报表的责任

按照中华人民共和国财政部颁布的企业会计准则的规定编制财务报表是贵公司管理层的责任。这种责任包括:(1)设计、实施和维护与财务报表编制相关的内部控制,以使财务报表不存在由于舞弊或错误而导致的重大错报;(2)选择和运用恰当的会计政策;(3)作出合理的会计估计。

### 二、注册会计师的责任

我们的责任是在实施审计工作的基础上对财务报表发表审计意见。我们按照中国注册会计师审计准则的规定执行了审计工作。中国注册会计师审计准则要求我们遵守职业道德规范,计划和实施审计工作以对财务报表是否不存在重大错报获取合理保证。

审计工作涉及实施审计程序,以获取有关财务报表金额和披露的审计证据。选择的审计程序取决于注册会计师的判断,包括对由于舞弊或错误导致的财务报表重大错报风险的评估。在进行风险评估时,我们考虑与财务报表编制相关的内部控制,以设计恰当的审计程序,但目的并非对内部控制的有效性发表意见。审计工作还包括评价管理层选用会计政策的恰当性和作出会计估计的合理性,以及评价财务报表的总体列报。

我们相信,我们获取的审计证据是充分、适当的,为发表审计意见提供了基础。

## 审计报告 (续)

KPMG-A(2011)AR No.0208

## 三、 审计意见

我们认为，贵公司财务报表已经按照中华人民共和国财政部颁布的企业会计准则的规定编制，在所有重大方面公允反映了贵公司 2010 年 12 月 31 日的合并财务状况和财务状况以及 2010 年度的合并经营成果和经营成果以及合并现金流量和现金流量。



毕马威华振会计师事务所

中国注册会计师

周欣



中国 北京

周朋



二〇一一年三月三十一日



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## Audit Report

Board of Directors of Changchun Railway Vehicles Co., Ltd.,

We have audited financial statements of Changchun Railway Vehicles Co., Ltd (hereinafter referred to as “Your Company”) enclosed with page no. from 1 to 103, including consolidated balance sheet and balance sheet on Dec. 31<sup>st</sup>, 2010, consolidated profit statement and profit statement, consolidated statement of changes in owners’ equity and statement of changes in owners’ equity, consolidated cash flow statement and cash flow statement and notes to financial statements in 2010.

### **I. Responsibility of Your Company’s Management to Financial Statements**

Preparing financial statements as per stipulations in Accounting Standards for Business Enterprises issued by Ministry of Finance of the People’s Republic of China is the responsibility of your company’s management. The responsibility includes: (1) design, implementation and maintenance of internal control related to preparation of financial statements, so as to avoid material misstatements caused by fraud and error in financial statements; (2) to choose and apply appropriate accounting policies; (3) to make reasonable accounting estimation.

### **II. The Responsibility of Certified Public Accountant**

Our responsibility is to give auditing opinions for financial statements on the basis of audit implementation. We have implemented audit according to stipulations of Auditing Standards of Chinese Certified Public Accountant. Auditing Standards of Chinese Certified Public Accountant requires us to follow professional code of ethics, to plan and implement audit work, so as to obtain reasonable guarantee that there are no material misstatements in financial statements.

The audit work involves implementation of auditing procedure, so as to obtain audit evidences for financial statements amounts concerned and disclosure. The auditing procedure selected depends on the decision of certified public accountant, including risk estimation for material misstatements caused by fraud and error in financial statements. When we make risk estimation, we consider internal control related to preparation of financial statements, so as to design appropriate auditing procedure, however, the purpose is not to propose opinions for the effectiveness of internal control.

The audit work also include to evaluate appropriateness of accounting policies chosen by management and rationality of accounting estimation made by management, and evaluate the overall presentation of financial statements.

We believe that auditing evidences obtained by us are sufficient and appropriate, which provides basis for giving auditing opinions.

KPMG Huazhen, a Sino-foreign joint venture in China and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.





## Audit Report (Continued)

KPMG-A(2011)AR No.0208

### III. Auditing Opinions

We hold that your company's financial statements have been prepared upon stipulations in Accounting Standards for Business Enterprises issued by Ministry of Finance of the People's Republic of China, and have fairly reflected your company's consolidated financial position and financial position on Dec, 31<sup>st</sup>, 2010, consolidated operating results and operating results, consolidated cash flow and cash flow in 2010 in all major aspects.

KPMG Huazhen

Chinese Certified Public Accountants

Zhou Xin

Beijing, China

Zhou Peng

Date: Mar. 31<sup>st</sup>, 2011

# 公 证 书

(2013)吉长信维证外字第 17042 号

申请人:- 长春轨道客车股份有限公司, 企业法人营业执照注册号: 2200000000093577, 住所: 长春市长客路 2001 号。

法定代表人: 董晓峰, 男, 一九五四年十二月一日出生, 公民身份号码: 220103195412013712。

公证事项: 复印件与原件相符

兹证明前面的复印件与《审计报告》的原件相符。

中华人民共和国吉林省长春市信维公证处

公证员:

张英姿

二〇一三年六月八日



1132304175



# NOTARIAL CERTIFICATE

(Translation)

(2013) J C X W Z W Zi, No.17042

Applicant: Changchun Railway Vehicles Co., Ltd.,  
Registration No. of Business License of Legal Entity:  
220000000093577, Address: No.2001, Changke Road, Changchun  
City.

Legal Representative: Dong Xiaofeng, male, was born on  
December 1, 1954, I.D. Card No.: 220103195412013712.

Notarized Matter: THE DUPLICATE COPY IS IN CONFORMITY WITH  
THE ORIGINAL COPY

This is to certify that the duplicate copy attached hereto  
is in conformity with the original copy of AUDIT REPORT.

Notary: Zhang Yingzi

Xinwei Notary Public Office of  
Changchun City, Jilin Province  
The People's Republic of China  
June 8, 2013

**CHANGCHUN RAILWAY VEHICLES CO., LTD**

**ANNUAL FINANCIAL STATEMENTS  
FROM JAN. 1<sup>ST</sup>, 2010 TO DEC. 31<sup>ST</sup>, 2010**



Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet  
Dec. 31<sup>st</sup>, 2010  
(Monetary Unit: CNY)

	Notes	Year 2010	Year 2009
Assets			
Current Assets			
Monetary Funds	7	312,115,997.47	655,917,643.24
Notes Receivable	8	-	1,500,000.00
Accounts Receivable	9	714,795,620.89	1,550,084,717.14
Prepayments	10	2,741,362,697.15	1,854,631,348.81
Other Receivables	11	89,131,734.26	70,945,446.99
Inventories	12	8,671,879,497.13	2,668,943,903.55
Other Current Assets	13	356,951,185.72	254,367,522.09
Total Current Assets		<u>12,886,236,732.62</u>	<u>7,056,390,581.82</u>
Non-current Assets			
Long-term Equity Investment	14	248,643,443.46	252,401,575.59
Fixed Assets	15	2,850,837,352.36	1,739,231,571.42
Construction in Progress	16	2,168,838,303.81	1,345,854,754.30
Construction Materials		581,536,203.32	493,642,205.43
Intangible Assets	17	888,673,159.05	867,209,361.56
Development Expenditure		8,620,259.08	6,933,037.24
Long-term Unamortized Expenses		3,130,339.27	4,106,083.00
Deferred Income Tax Assets	18	24,486,993.77	18,525,776.73
Other non-current Assets		227,588,404.00	-
Total Non-current Assets		<u>7,002,354,458.12</u>	<u>4,727,904,365.27</u>
Total Assets		<u>19,888,591,190.74</u>	<u>11,784,294,947.09</u>

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Liabilities and Owner's Equity			
Current Liabilities			
Short-term Loan	19	81,841,042.07	64,507,886.52
Notes Payable	20	470,760,472.04	107,640,512.72
Accounts Payable	21	3,899,795,483.89	3,048,530,900.27
Advances Received	22	8,211,074,369.94	3,823,093,649.31
Payroll Payable	23	201,058,681.77	237,717,219.67
Taxes payable	5(3)	38,871,705.54	110,261,818.49
Interests Payable		2,128,933.47	2,043,236.25
Dividends Payable	24	24,285,517.95	17,390,758.06
Others Payable	25	327,793,104.49	156,269,789.42
Non-current Liabilities Due			
Within One Year	26	82,720,853.86	-
Estimated Liabilities	27	96,203,977.05	45,310,033.33
Total Current Liabilities		<u>13,436,534,142.07</u>	<u>7,612,765,804.04</u>
		.....	.....
Long-term Liabilities			
Long-term Loan	28	863,000,000.00	125,000,000.00
Long-term Accounts Payable	29	173,328,969.52	144,301,551.65
Other Non-current Liabilities	30	144,797,521.54	168,301,000.00
Total Non-current Liabilities		<u>1,181,126,491.06</u>	<u>437,602,551.65</u>
		.....	.....
Total Liabilities		<u>14,617,660,633.13</u>	<u>8,050,368,355.69</u>
		.....	.....

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Liabilities and Owner's Equity (Continued)			
Owner's Equity			
Paid-in Capital	31	2,079,387,600.00	1,671,976,870.00
Capital Surplus	32	2,489,729,081.80	1,843,717,191.68
Surplus Reserves	33	82,784,589.33	26,773,407.14
Undistributed Profit	34	588,820,884.64	184,980,274.36
Total Owner's Equity Attributable to the Parent Company		5,240,722,155.77	3,727,447,743.18
Minority Shareholder's Equity		30,208,401.84	6,478,848.22
Total Owner's Equity		5,270,930,577.61	3,733,926,591.40
		.....	.....
Total Liabilities and Owner's Equity		19,888,591,190.74	11,784,294,947.09
		=====	=====

This financial statement has been approved by management on Mar. 31st, 2011.

Dong Xiaofeng	Lu Xiwei	Di Jinying	Liu Qi
Legal Representative	The Head in Charge of Financial Work	Financial Controller	The Head of Accounting Body(Company Seal)
(Signature and Seal)	(Signature and Seal)	(Signature and Seal)	(Signature and Seal)

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Balance Sheet

Dec. 31<sup>st</sup>, 2010

(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Assets			
Current Assets			
Monetary Funds	7	235,947,238.36	490,775,210.03
Notes Receivable	8	-	1,500,000.00
Accounts Receivable	9	690,486,110.50	1,520,067,916.80
Prepayments	10	2,948,363,853.39	1,499,723,233.75
Other Receivables	11	84,249,805.87	66,277,730.05
Inventories	12	8,624,634,420.24	2,597,476,094.60
Other Current Assets	13	342,626,787.62	207,950,245.01
Total Current Assets		<u>12,926,308,215.98</u>	<u>6,383,770,430.24</u>
Non-current Assets			
Long-term Equity Investment	14	368,624,394.46	320,695,794.57
Fixed Assets	15	2,737,966,590.17	1,735,346,574.00
Construction in Progress	16	1,986,348,645.52	432,008,052.16
Construction Materials		581,536,203.32	310,815,787.94
Intangible Assets	17	845,515,477.95	867,079,484.73
Development Expenditure		8,378,010.05	6,933,037.24
Long-term Unamortized Expenses		3,053,339.27	-
Deferred Income Tax Assets	18	22,455,304.00	17,637,210.87
Other Non-current Assets		227,588,404.00	-
Total Non-current Assets		<u>6,781,466,368.74</u>	<u>3,690,515,941.51</u>
Total Assets		<u>19,707,774,584.72</u>	<u>10,074,286,371.75</u>

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Liabilities and Owner's Equity			
Current Liabilities			
Short-term Loan	19	61,841,042.07	35,415,360.00
Notes Payable	20	470,760,472.04	107,640,512.72
Accounts Payable	21	3,888,587,728.62	3,045,402,051.51
Advances Received	22	8,161,314,488.88	3,821,446,426.21
Payroll Payable	23	199,364,320.69	237,213,279.67
Taxes payable	5(3)	33,161,545.40	108,791,078.50
Interests Payable		2,101,008.47	-
Dividends Payable	24	24,285,517.95	17,390,758.06
Others Payable	25	270,321,384.51	114,143,973.62
Non-current Liabilities Due			
Within One Year	26	82,720,853.86	-
Estimated Liabilities	27	95,978,055.56	45,310,033.33
Total Current Liabilities		<u>13,290,436,418.05</u>	<u>7,532,753,473.62</u>
		.....	.....
Long-term Liabilities			
Long-term Loan	28	863,000,000.00	-
Long-term Accounts Payable	29	173,328,969.52	144,301,551.65
Other Non-current Liabilities	30	132,857,521.54	82,901,000.00
Total Non-current Liabilities		<u>1,169,186,491.06</u>	<u>227,202,551.65</u>
		.....	.....
Total Liabilities		<u>14,459,622,909.11</u>	<u>7,759,956,025.27</u>
		.....	.....

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Liabilities and Owner's Equity (Continued)			
Owner's Equity			
Paid-in Capital	31	2,079,387,600.00	1,110,000,000.00
Capital Surplus	32	2,449,637,374.45	974,108,520.71
Surplus Reserves	33	82,784,589.33	26,773,407.14
Undistributed Profit	34	636,342,111.83	203,448,418.63
Total Owner's Equity		<u>5,248,151,675.61</u>	<u>2,314,330,346.48</u>
Total Liabilities and Owner's Equity		<u>19,707,774,584.72</u>	<u>10,074,286,371.75</u>

This financial statement has been approved by management on Mar. 31<sup>st</sup>, 2011.

Dong Xiaofeng	Lu Xiwei	Di Jinying	Liu Qi
Legal Representative	The Head in Charge of Financial Work	Financial Controller	The Head of Accounting Body(Company Seal)
(Signature and Seal)	(Signature and Seal)	(Signature and Seal)	(Signature and Seal)

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.

Consolidated Profit Statement

Year 2010

(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Operating Revenue	35	10,768,580,710.95	5,767,295,361.82
Less: Operating Costs		8,874,082,017.79	4,918,405,591.76
Sales Taxes and Surcharges		3,876,022.33	19,933,188.02
Sales Expenses		291,928,982.65	129,922,607.53
General and Administrative Expenses		892,902,927.14	537,433,260.16
Financial Expenses	36	199,188,175.87	(7,287,018.93)
Assets Impairment Loss	37	19,110,678.58	(5,470,328.76)
Plus: Net Investment Income	38	8,438,388.01	84,611,614.53
(Thereof: Income from Investment in Associated Enterprises and Joint Ventures)		12,756,299.89	84,611,614.53
Operating Profit		495,930,294.60	258,969,676.57
Plus: Non-operating Revenue	39	89,578,480.83	119,382,357.87
Less: Non-operating Expenditures	40	25,677,116.17	13,303,725.43
(Thereof: Non-current Assets Disposal and Discarding Loss)		479,534.16	1,154,422.15
Total Profit		559,831,659.26	365,048,309.01
Less: Income Tax	41	56,774,267.19	33,200,187.72
Net Profit		503,057,392.07	331,848,121.29
Net Profit Attributable to Owners of Parent Company		519,788,196.89	331,522,604.04
Minority Interest Income		(16,730,804.82)	325,517.25
Other Comprehensive Income		-	-
Total Comprehensive Income		503,057,392.07	331,848,121.29
Comprehensive Income Attributable to Shareholders of Parent Company		519,788,196.89	331,522,604.04
Comprehensive Income Attributable to Minority Shareholders		(16,730,804.82)	325,517.25

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Profit Statement

Year 2010

(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Operating Revenue	35	10,707,257,087.28	5,708,335,308.72
Less: Operating Costs		8,856,439,023.72	4,888,866,954.81
Sales Taxes and Surcharges		2,788,896.69	18,207,779.04
Sales Expenses		285,247,372.88	126,299,713.00
General and Administrative Expenses		819,447,852.60	504,696,376.80
Financial Expenses	36	187,479,477.19	(12,927,077.53)
Assets Impairment Loss	37	13,427,151.04	(6,487,633.49)
Plus: Net Investment Income	38	8,438,388.01	84,611,614.53
(Thereof: Income from Investment in Associated Enterprises and Joint Ventures)		12,756,299.89	84,611,614.53
Operating Profit		<u>550,865,701.17</u>	<u>274,290,810.62</u>
Plus: Non-operating Revenue	39	86,089,754.25	116,801,307.66
Less: Non-operating Expenditures	40	25,357,404.31	12,916,585.62
(Thereof: Non-current Assets Disposal and Discarding Loss)		477,204.66	1,153,529.65
Total Profit		<u>611,598,051.11</u>	<u>378,175,532.66</u>
Less: Income Tax	41	51,486,299.20	26,436,189.84
Net Profit		<u>560,111,821.91</u>	<u>351,739,342.82</u>
Other Comprehensive Income		<u>-</u>	<u>-</u>
Total Comprehensive Income		<u>560,111,821.91</u>	<u>351,739,342.82</u>

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.

Consolidated Cash Flow Statement

Year 2010

(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Cash Flows from Operating Activities:			
Cash Received from Sale of Goods or Rendering of Service		16,911,216,301.29	9,858,589,158.09
Refund of Tax and Levies		234,177,517.70	55,189,290.81
Other Cash Received Relating to Operating Activities		149,702,970.09	241,704,909.30
Sub-total Cash Inflows from Operating Activities		17,295,096,789.08	10,155,483,358.20
Cash Paid for Goods and Services		(15,436,251,499.98)	(6,928,856,731.96)
Cash Paid to and on Behalf of Employees		(1,063,772,245.37)	(708,999,681.53)
Cash Payments for All Taxes		(254,129,077.03)	(310,514,503.42)
Other Cash Payment Relating to Operating Activities		(588,208,797.49)	(320,903,145.73)
Sub-total Cash Outflows from Operating Activities		(17,342,361,619.87)	(8,269,274,062.64)
Net Cash Flows from Operating Activities	42(1)	(47,264,830.79)	1,886,209,295.56
Cash Flows from Investing Activities			
Cash Received from Investment Recovery		200,000,000.00	-
Cash Received from Investment Return		113,888.89	-
Net Cash Received from Disposal of Fixed Assets, Intangible Assets and Other Long-term Assets		2,343,363.73	9,557,021.94
Other Cash Received Relating to Investing Activities		-	4,297,908.91
Sub-total Cash Inflows from Investing Activities		202,457,252.62	13,854,930.85
Cash Paid to Acquire Fixed Assets, Intangible Assets and Other Long-term Assets		(1,977,419,781.87)	(1,856,334,916.52)
Cash Paid to Acquire Investment		-	(200,000,000.00)
Net Cash Paid by Subsidiaries and Other Business Units		(25,678,685.74)	-
Other Cash Payments Relating to Investing Activities		-	(5,776.00)
Sub-total Cash Outflows from Investing Activities		(2,003,098,467.61)	(2,056,340,692.52)
Net Cash Flows from Investing Activities		(1,800,641,214.99)	(2,042,485,761.67)

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Cash Flow Statement (Continued)  
Year 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Cash Flows from Financing Activities			
Cash Received from Capital Contribution		1,053,422,620.12	1,317,330,000.00
Cash Received from Loan		5,062,428,464.27	2,440,816,297.22
		<hr/>	<hr/>
Sub-total Cash Inflows from Financing Activities		6,115,851,084.39	3,758,146,297.22
		<hr/>	<hr/>
Cash Repaid for Debts		(4,422,087,328.27)	(3,079,514,693.47)
Cash Paid for Distribution of Dividends, Profit or Repaid for Loan Interests		(136,294,381.37)	(84,270,780.81)
Other Cash Payments Relating to Financing Activities		(459,391.69)	(705,602.31)
		<hr/>	<hr/>
Sub-total Cash Outflows from Financing Activities		(4,558,841,101.33)	(3,164,491,076.59)
		<hr/>	<hr/>
Net Cash Flows from Financing Activities		1,557,009,983.06	593,655,220.63
		<hr/>	<hr/>
Effect of Foreign Exchange Rate Changes on Cash and Cash Equivalents		(52,905,583.05)	1,648,768.93
		<hr/>	<hr/>
Net (Decrease) / Increase in Cash and Cash Equivalents	42(3)	(343,801,645.77)	439,027,523.45
		<hr/>	<hr/>
Plus: Cash and Cash Equivalents Balance at the Beginning of the Year		655,917,643.24	216,890,119.79
		<hr/>	<hr/>
Cash and Cash Equivalents Balance at the End of the Year		312,115,997.47	655,917,643.24
		<hr/>	<hr/>

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Cash Flow Statement

Year 2010

(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Cash Flows from Operating Activities:			
Cash Received from Sale of Goods or Rendering of Service		16,781,548,877.28	9,658,697,559.88
Refund of Tax and Levies		232,579,962.44	54,054,377.19
Other Cash Received Relating to Operating Activities		52,955,140.89	155,962,674.83
Sub-total Cash Inflows from Operating Activities		17,067,083,980.61	9,868,714,611.90
Cash Paid for Goods and Services		(15,616,572,157.59)	(6,675,655,901.40)
Cash Paid to and on Behalf of Employees		(1,049,507,603.09)	(694,796,035.54)
Cash Payments for All Taxes		(237,838,723.57)	(289,852,713.00)
Other Cash Payment Relating to Operating Activities		(554,231,048.18)	(276,702,438.87)
Sub-total Cash Outflows from Operating Activities		(17,458,149,532.43)	(7,937,007,088.81)
Net Cash Flows from Operating Activities	42(1)	(391,065,551.82)	1,931,707,523.09
Cash Flows from Investing Activities			
Cash Received from Investment Recovery		200,000,000.00	-
Cash Received from Investment Return		113,888.89	-
Net Cash Received from Disposal of Fixed Assets, Intangible Assets and Other Long-term Assets		2,343,363.73	1,228,819.33
Other Cash Received Relating to Investing Activities		-	4,297,908.91
Sub-total Cash Inflows from Investing Activities		202,457,252.62	5,526,728.24
Cash Paid to Acquire Fixed Assets, Intangible Assets and Other Long-term Assets		(771,336,057.18)	(595,923,687.11)
Cash Paid to Acquire Investment		-	(200,000,000.00)
Net Cash Paid by Subsidiaries and Other Business Units		(35,172,300.00)	(800,000.00)
Other Cash Payments Relating to Investing Activities		-	(5,776.00)
Sub-total Cash Outflows from Investing Activities		(806,508,357.18)	(796,729,463.11)
Net Cash Flows from Investing Activities		(604,051,104.56)	(791,202,734.87)

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Cash Flow Statement (Continued)  
Year 2010  
(Monetary Unit: CNY)

	Notes	<u>Year 2010</u>	<u>Year 2009</u>
Cash Flows from Financing Activities			
Cash Received from Capital Contribution		1,053,422,620.12	5,330,000.00
Cash Received from Loan		4,032,428,464.27	392,793,820.00
Other Cash Received Relating to Financing Activities		24,791,994.43	-
		<hr/>	<hr/>
Sub-total Cash Inflows from Financing Activities		5,110,643,078.82	398,123,820.00
		<hr/>	<hr/>
Cash Repaid for Debts		(4,206,002,782.20)	(1,082,887,300.00)
Cash Paid for Distribution of Dividends, Profit or Repaid for Loan Interests		(111,870,179.47)	(55,902,393.42)
		<hr/>	<hr/>
Sub-total Cash Outflows from Financing Activities		(4,317,872,961.67)	(1,138,789,693.42)
		<hr/>	<hr/>
Net Cash Flows from Financing Activities		792,770,117.15	(740,665,873.42)
		<hr/>	<hr/>
Effect of Foreign Exchange Rate Changes on Cash and Cash Equivalents		(52,481,432.44)	1,829,246.47
		<hr/>	<hr/>
Net (Decrease) / Increase in Cash and Cash Equivalents	42(3)	(254,827,971.67)	401,668,161.27
		<hr/>	<hr/>
Plus: Cash and Cash Equivalents Balance at the Beginning of the Year		490,775,210.03	89,107,048.76
		<hr/>	<hr/>
Cash and Cash Equivalents Balance at the End of the Year		235,947,238.36	490,775,210.03
		<hr/>	<hr/>

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity  
Year 2010

Monetary Unit: CNY

Item	Amount in Current Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders'	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total	Equity	
I. The Balance at the End of Last Year	1,671,976,870.00	1,843,717,191.68	26,773,407.14	184,980,274.36	3,727,447,743.18	6,478,848.22	3,733,926,591.40
Plus: Accounting Policy Alteration	-	-	-	-	-	-	-
Prior Errors Correction	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
II. Opening Balance in Current Year	1,671,976,870.00	1,843,717,191.68	26,773,407.14	184,980,274.36	3,727,447,743.18	6,478,848.22	3,733,926,591.40
III. Increase/Decrease Amount in Current Year	407,410,730.00	646,011,890.12	56,011,182.19	403,840,610.28	1,513,274,412.59	23,729,553.62	1,537,003,966.21
(I) Net Profit	-	-	-	519,788,196.89	519,788,196.89	(16,730,804.82)	503,057,392.07
(II) Other Comprehensive Income	-	-	-	-	-	-	-
Sub-total of above (I) and (II)	-	-	-	519,788,196.89	519,788,196.89	(16,730,804.82)	503,057,392.07
(III) Capital Contributed/Decreased by Owners	407,410,730.00	646,011,890.12	-	-	1,053,422,620.12	40,460,358.44	1,093,882,978.56
1. Capital Contributed by Owners	407,410,730.00	646,011,890.12	-	-	1,053,422,620.12	-	1,053,422,620.12
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-
3. Others	-	-	-	-	-	40,460,358.44	40,460,358.44

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount in Current Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Profit Distribution	-	-	56,011,182.19	(115,947,586.61)	(59,936,404.42)	-	(59,936,404.42)
1. Appropriation of Surplus Reserves	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Thereof: Legal Surplus Reserves	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Optional Surplus Reserves	-	-	-	-	-	-	-
2. Profit Distribution to Owners	-	-	-	(59,936,404.42)	(59,936,404.42)	-	(59,936,404.42)
3. Others	-	-	-	-	-	-	-
(V) Transfer Within Owners' Equity	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
I. The Balance at the End of Last Year	1,110,000,000.00	968,778,520.71	4,168,027.29	(123,610,257.47)	1,959,336,290.53	6,153,330.97	1,965,489,621.50
Plus: Accounting Policies Alteration	-	-	-	-	-	-	-
Prior Errors Correction	-	-	-	-	-	-	-
Others	561,976,870.00	(442,391,329.03)	-	(326,692.36)	119,258,848.61	-	119,258,848.61
II. Opening Balance in Current Year	1,671,976,870.00	526,387,191.68	4,168,027.29	(123,936,949.83)	2,078,595,139.14	6,153,330.97	2,084,748,470.11
III. Increase/Decrease Amount in Current Year	-	1,317,330,000.00	22,605,379.85	308,917,224.19	1,648,852,604.04	325,517.25	1,649,178,121.29
(I) Net Profit	-	-	-	331,522,604.04	331,522,604.04	325,517.25	331,848,121.29
(II) Other Comprehensive Income	-	-	-	-	-	-	-
Sub-total of Above (I) and (II)	-	-	-	331,522,604.04	331,522,604.04	325,517.25	331,848,121.29
(III) Capital Contributed and Decreased	-	1,317,330,000.00	-	-	1,317,330,000.00	-	1,317,330,000.00
1. Capital Contributed	-	1,312,000,000.00	-	-	1,312,000,000.00	-	1,312,000,000.00
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-
3. Others	-	5,330,000.00	-	-	5,330,000.00	-	5,330,000.00

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount of Last Year						Minority Shareholders' Equity	Total Owner's Equity
	Owner's Equity Attributable to Parent Company							
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total			
(IV) Profit Distribution	-	-	22,605,379.85	(22,605,379.85)	-	-	-	
1. Appropriation of Surplus Reserves	-	-	22,605,379.85	(22,605,379.85)	-	-	-	
Thereof: Legal Surplus Reserves	-	-	22,605,379.85	(22,605,379.85)	-	-	-	
Optional Surplus Reserves	-	-	-	-	-	-	-	
2. Profit Distribution to Owners	-	-	-	-	-	-	-	
3. Others	-	-	-	-	-	-	-	
(V) Transfers Within Owners' Equity	-	-	-	-	-	-	-	
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-	
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-	
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-	
4. Others	-	-	-	-	-	-	-	
IV. The Balance at the End of Current Year	1,671,976,870.00	1,843,717,191.68	26,773,407.14	184,980,274.36	3,727,447,743.18	6,478,848.22	3,733,926,591.40	

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity  
Year 2010

Monetary Unit: CNY

Item	Amount in Current Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
I. The Balance at the End of Last Year	1,110,000,000.00	974,108,520.71	26,773,407.14	203,448,418.63	2,314,330,346.48	-	2,314,330,346.48
Plus: Accounting Policy Alteration	-	-	-	-	-	-	-
Prior Errors Correction	-	-	-	-	-	-	-
II. Opening Balance in Current Year	1,110,000,000.00	974,108,520.71	26,773,407.14	203,448,418.63	2,314,330,346.48	-	2,314,330,346.48
III. Increase/Decrease Amount in Current Year	969,387,600.00	1,475,528,853.74	56,011,182.19	432,893,693.20	2,933,821,329.13	-	2,933,821,329.13
(I) Net Profit	-	-	-	560,111,821.91	560,111,821.91	-	560,111,821.91
(II) Other Comprehensive Income	-	-	-	-	-	-	-
Sub-total of above (I) and (II)	-	-	-	560,111,821.91	560,111,821.91	-	560,111,821.91
(III) Capital Contributed/Decreased by Owners	969,387,600.00	1,475,528,853.74	-	-	2,444,916,453.74	-	2,444,916,453.74
1. Capital Contributed by Owners	969,387,600.00	1,475,528,853.74	-	-	2,444,916,453.74	-	2,444,916,453.74
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-
3. Others	-	-	-	-	-	-	-

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount in Current Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Profit Distribution	-	-	56,011,182.19	(127,218,128.71)	(71,206,946.52)	-	(71,206,946.52)
1. Appropriation of Surplus Reserves	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Thereof: Legal Surplus Reserves	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Optional Surplus Reserves	-	-	-	-	-	-	-
2. Profit Distribution to Owners	-	-	-	(71,206,946.52)	(71,206,946.52)	-	-
3. Others	-	-	-	-	-	-	-
(V) Transfer Within Owners' Equity	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
I. The Balance at the End of Last Year	1,110,000,000.00	968,778,520.71	4,168,027.29	(125,685,544.34)	1,957,261,003.66	-	1,957,261,003.66
Plus: Accounting Policies Alteration	-	-	-	-	-	-	-
Prior Errors Correction	-	-	-	-	-	-	-
II. Opening Balance in Current Year	-	-	-	-	-	-	-
III. Increase/Decrease Amount in Current Year	1,110,000,000.00	968,778,520.71	4,168,027.29	(125,685,544.34)	1,957,261,003.66	-	1,957,261,003.66
(I) Net Profit	-	5,330,000.00	22,605,379.85	329,133,962.97	357,069,342.82	-	357,069,342.82
(II) Other Comprehensive Income	-	-	-	351,739,342.82	351,739,342.82	-	351,739,342.82
Sub-total of Above (I) and (II)	-	-	-	351,739,342.82	351,739,342.82	-	351,739,342.82
(III) Capital Contributed and Decreased by Shareholders	-	5,330,000.00	-	-	5,330,000.00	-	5,330,000.00
1. Capital Contributed by Shareholders	-	-	-	-	-	-	-
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-
3. Others	-	5,330,000.00	-	-	5,330,000.00	-	5,330,000.00

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2010

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Profit Distribution	-	-	22,605,379.85	(22,605,379.85)	-	-	-
1. Appropriation of Surplus Reserves	-	-	22,605,379.85	(22,605,379.85)	-	-	-
Thereof: Legal Surplus Reserves	-	-	22,605,379.85	(22,605,379.85)	-	-	-
Optional Surplus Reserves	-	-	-	-	-	-	-
2. Profit Distribution to Owners	-	-	-	-	-	-	-
3. Others	-	-	-	-	-	-	-
(V) Transfers Within Owners' Equity	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	1,110,000,000.00	974,108,520.71	26,773,407.14	203,448,418.63	2,314,330,346.48	-	2,314,330,346.48

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in State-owned Property (Consolidated)  
Year 2010

Monetary Unit: CNY

Item	Amount	Item	Amount
I. Total State-owned Capital and Equity at the Beginning of the Year	3,424,038,764.38	III. State-owned Capital & Equity Decrease	51,099,191.27
II. State-owned Capital & Equity Increased in Current Year	1,525,143,864.69	(I) Cancellation by the State Special Approval	-
(I) Direct or Additional Investment from the State, State-owned Entity	1,053,422,620.12	(II) Gratuitous Transfer-out	-
(II) Gratuitous Transfer-in	-	(III) Decrease from Assets Appraisal	-
(III) Increase from Assets Appraisal	-	(IV) Decrease from Assets and Capital Verification	-
(IV) Increase from Assets and Capital Verification	-	(V) Decrease from Property Rights Definition	-
(V) Increase from Property Rights Definition	-	(VI) Decrease Due to Offsets of Potential Losses and Credit Ledger in Prior Years	-
(VI) Capital (Stock) Premium	-	(VII) Decrease Due to Force Majeure Such as Natural Disaster	-
(VII) Accepting Donations	-	(VIII) Decrease Due to Main-auxiliary Separation	-
(VIII) Debt-for-equity Swap	-	(IX) Profit Payment by Enterprise Upon Regulations	51,099,191.27
(IX) Refund of Tax and Levies	-	(X) Capital (Stock) Discount	-
(X) Supplementary Current Capital	-	(XI) Other Factors Determined by Central and Local Governments	-
(XI) Reversal of Assets Impairment	-	(XII) Business Impairment	-
(XII) Accounting Adjustment	-	IV. Total State-owned Capital & Equity at the End of Year	4,898,053,437.80
(XIII) Other Factors Determined by Central and Local Governments	-	V. Other State-owned Funds	-
(XIV) Business Accumulation	471,721,244.57	VI. Total State-owned Assets at the End of Year	4,898,053,437.80

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in State-owned Property (Consolidated)  
Year 2010

Monetary Unit: CNY

Item	Opening Balance In Current Year	Increase in Current Year				Decrease in Current Year					Closing Balance in Current Year
		Accrual Amount In Current Year	Increase by Merger	Increase Due to Other Reasons	Total	Reversals Due to Rise of Assets Value	Writing-off Amount	Decrease by Merger	Decrease Due to Other Reasons	Total	
I.Bad-debt Provision	17,265,092.95	15,019,106.88	-	-	15,019,106.88	-	-	-	12,125,976.67	12,125,976.67	20,158,223.16
II.Inventory Impairment Provision	-	16,217,548.37	-	-	16,217,548.37	-	9,658,615.68	-	-	9,658,615.68	6,558,932.69
III.Impairment Provision of Financial Assets Available for Sale	-	-	-	-	-	-	-	-	-	-	-
IV.Impairment Provision for Assets Held to Maturity	-	-	-	-	-	-	-	-	-	-	-
V.Impairment Provision for Long-term Equity Investment	-	-	-	-	-	-	-	-	-	-	-
VI.Impairment Provision for Investment Real Estate	-	-	-	-	-	-	-	-	-	-	-
VII Impairment Provision for Fixed Assets	-	-	-	-	-	-	-	-	-	-	-
VIII Impairment Provision for Construction Materials	-	-	-	-	-	-	-	-	-	-	-
IX. Impairment Provision for Construction in Progress	-	-	-	-	-	-	-	-	-	-	-
X. Impairment Provision for Productive Biological Assets	-	-	-	-	-	-	-	-	-	-	-
XI.Impairment Provision for Oil and Gas Assets	-	-	-	-	-	-	-	-	-	-	-
XII.Impairment Provision for Intangible Assets	-	-	-	-	-	-	-	-	-	-	-
XIII. Impairment Provision for Goodwill	-	-	-	-	-	-	-	-	-	-	-
XIV. Other Impairment Provisions	-	-	-	-	-	-	-	-	-	-	-
Total	17,265,092.95	31,236,655.25	-	-	31,236,655.25	-	9,658,615.68	-	12,125,976.67	21,784,592.35	26,717,155.85

Notes to financial statements published on page 23 to page 103 are the integrated part of this financial statement.

## Notes to Financial Statements

Up to Dec. 31, 2010<sup>+</sup>

(The monetary unit of the Notes is RMB yuan)

1. Brief introduction to the Company

CNR Changchun Railway Vehicles Co., Ltd. (hereinafter referred to as "the Company") is a limited liability company founded in Changchun, Jilin Province, in March 2002 under the approval of the State Economic and Trade Commission (the Approval No.: G.J.M.Q.G. [2002] No. 136), and handled the industrial and Commercial registration procedures in Industrial and Commercial Administration of Changchun City and got the Business License of Enterprise Legal Person (Registered No.:2200001009604) issued by Industrial and Commercial Administration of Changchun City on March 18, 2002. The operation period of the Company is 20 years since the date of the founding of the Company, with the registered capital of RMB 530 million yuan.

The Company is a company limited by shares established by means of promotion with China Northern Locomotive and Rolling Stock Industry (Group) Corporation (hereinafter referred to as "Group Company") as the main promoter. The Group Company invested in the Company with its subordinate and railway vehicles and urban mass transit vehicles manufacturing (Main Business) related business assets and liabilities ("Net Assets"), the above net assets was assessed by China Assets Appraisal Co., Ltd., the appraised net assets is RMB 595.4402 million yuan. After approved by Ministry of Finance with Ministry of Finance's Reply on Issues Related to Changchun Railway Vehicles Co., Ltd. (Preparation) State-owned Stock Rights Management, the net assets invested by the Group Company in the Company is converted into the Company's capital stock of 390,602,30 shares in the proportion of 65.6%, with par value of RMB 1.00 yuan/ share.

Other promoters contributed with cash, totally paid RMB 212.5 million yuan, which is converted into the Company's capital stock of 139,397,700 shares in the proportion of 65.6%.

After approved by Commission of the State-Owned Assets Supervision and Administration (hereinafter referred to as "the State Assets Commission") with Reply on the Overall Reorganization and Getting Listed Domestically of China Northern Locomotive and Rolling Stock Industry (Group) Corporation (G.Z.G.G[2008] No. 294), the Group Company combined with other promoters to establish China CNR Corporation Limited (hereinafter referred to as "Corporation Limited" with the stock rights of 20 wholly-owned or holding subsidiaries including the Company and the related assets of the Group Company's Headquarter, with the after-appraisal value added part of cash with Dec. 31, 2007 as the appraisal benchmark. In accordance with the Restructuring Agreement signed between the Group Company and the Corporation Limited, the Group Company will transfer all its stock rights (the Company's 73.7% of the stock rights) to the Corporation Limited. The Company changed the company's articles of association on Aug. 27, 2008, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Aug. 29, 2008.



#### 1. Brief introduction to the Company (Continued)

In accordance with the resolution of the shareholders' Meeting on Sep. 17, 2008, the Company decided to increase the registered capital from RMB 530 million yuan to 1.11 billion yuan. The increased registered capital is subscribed by the new stockholders Changchun Railway Vehicle Equipment Co., Ltd. (hereinafter referred to as "CR Equipment") and CNR Changchun Railway Vehicles Group Co., Ltd. (hereinafter referred to as "CRC Group"). Among them, CR Equipment contributed RMB 829,415,165.24 yuan in the forms of monetary capital, physical assets and land use right, subscribed 404,310,656 shares; CRC Group contributed RMB 360,414,459.03 yuan in the form of monetary capital, subscribed 175,689,344 shares. Jilin Guangda Certified Public Accountants Firm made the verification on the paid-up of the newly added registered capital on Dec. 10, 2008, and issued J.G.Y.Zi.[2008]No. 1252 Capital Verification Report. The Company changed the company's articles of association on Dec. 19, 2008, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Dec. 31, 2008.

In accordance with the resolution of the shareholders' Meeting on Sep. 14, 2010, the Company's parent company- China CNR Corporation Limited (hereinafter referred to as CNR Corporation) added capital of RMB 1.032 billion yuan to the Company by means of capital raising investment fund, and CRC Group-the Company planed to absorb and merge the CNR Corporation's subsidiary, after absorption and merger, CRC Group will cancel its legal person's qualification, the formerly held all assets and liabilities will merge into the Company, and the credits and debts and business will also be inherited by the Company. This capital increase and the converted share price of merger are based on the estimated value of the net asset per share of the Company with Dec. 31, 2009 as the benchmark. In accordance with the Assets Evaluation Report of CNR Changchun Railway Vehicles Co., Ltd. on Project of Raising Capital for Increasing Capital and Absorption and Merger CNR Changchun Railway Vehicles Group Co., Ltd. (Z.Z.P.B.Zi. [2010] No. 78) issued by China Assets Appraisal Co., Ltd. on Jun. 25, 2010, the net assets on the benchmark is RMB 2.533 yuan. CNR Corporation's raising capital investment fund as per the above converted stock price, newly added the Company's common stock 407,410,730 shares. CNR Corporation used CRC Group's net assets evaluation value on Dec. 31, 2009 as per the above converted stock price, newly added the Company's common stock 737,666,214 shares, meanwhile cancel the Company's common stock 175,689,344 shares originally held by CRC Group. After this capital increasing and absorption and merger, Changchun Zhongfan Certified Public Accountants Firm Co., Ltd. made the Capital Verification of Alteration on Nov. 5, 2010, and issued the C.Z.F.Y.Zi. [2010] No. 155 Capital Verification Report. The Company altered the Company's Articles of Association, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Nov. 8, 2010.

The Company and its subsidiaries (hereinafter referred to as "the Group") mainly engage in the design, manufacturing, marketing, leasing and of railway vehicles, EMUs, urban mass transit vehicles and accessories, and technical services, technical consultation in relevant fields; operate the self-made products of the Group and the export business of the relevant products and technology, etc.

## 2. Preparation basis of Financial Statements

### (1) Statement of Abiding by Accounting Standards for Business Enterprises

The Financial Statements is in conformity with the requirements of Accounting Standards for Business Enterprises—basic standard and 38 detailed accounting standards, and later issued Application Guide of Accounting Standards for Business Enterprises, Explanation and other relevant provisions of Accounting Standards for Business Enterprises (hereinafter collectively referred to as “Accounting Standards for Business Enterprises”) issued by Ministry of Finance of the People’s Republic of China (hereinafter referred to as “Ministry of Finance” on Feb. 15, 2006, which reflect the relevant information of the Company’s combination financial situation on Dec. 31, 2011, and financial status, consolidated business performance and business performance, as well as consolidated cash flow and cash flow of the year 2011 truly and completely.

### (2) Fiscal year

The fiscal year of the Group is the Western calendar, i.e. from Jan 1 to Dec. 31 each year.

### (3) Measurement attribute

Use historical cost to measure when preparing the Financial Statements

-Financial assets and financial liabilities which are measured by fair values and their changes are included in the current profits and losses (including trading financial assets or financial liabilities) (Please see note 3(9)).

### (4) Currency of keeping accounts and presentation currency

The recording currency of the company is RMB. The currency used for preparation of financial statements is RMB.

## 3. Main accounting policies and main accounting estimates

### (1) Consolidated financial statements

#### (a) Enterprise Merger under Same Control

The enterprises involved in merger are finally controlled by same party or same multiparty before or after merger and this control is not temporary, which is called enterprise merger under same control. The assets and liabilities obtained by merging party in enterprise merger are measured at their book value in merged party on merger date. Capital premium (or stock premium) in capital surplus is adjusted by the difference between net assets book value obtained and the book value of merger price paid (or total stock nominal value issued); capital premium in capital surplus(or stock premium) shall adjust retained earnings other than write-off. Merger date refers to the date on which the merging party actually obtained control right to the merged party.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (1) Enterprise Merger and Consolidated Financial Statements (Continued)

##### (b) Enterprise Merger not under Same Control

The enterprises involved in merger are not finally controlled by same party or same multiparty before or after merger, which is called enterprise merger not under same control. If the difference that the total fair value of assets (including stocks of the acquiree held before acquisition date), liabilities incurred or assumed, and equity securities on acquisition date that the Group, as the acquirer, has paid for obtaining control right of the acquiree less fair value of identifiable net assets obtained from the acquiree is positive, it is recognized as goodwill; if it is negative, it is included in the current profits and losses. The Group includes the transaction costs of equity securities or debt securities issued for merger price in the initial recognition amount of equity securities or debt securities. The Group includes other direct expenses occurred for enterprise merger in the current profits and losses. The difference between fair value and book value of assets paid is included in the current profits and losses. Acquisition date refers to the date on which the acquirer actually obtains the control right of the acquiree.

The acquirer allocates combination cost on merger date, and recognize fair values of all identifiable assets, liabilities and contingent liabilities obtained from the acquiree.

If deductible temporary differences that the Group obtained from the acquiree during enterprise merger don't meet recognition conditions of deferred income tax assets on merger date, they are not recognized. If new or further information showing the relative situations on merger date exist within 12 months after the acquisition date, and the economic benefits from deductible temporary differences are expected to be realized on merger date in the acquiree, deferred income tax assets concerned shall be recognized. Goodwill is deducted at the same time other than offset, the differences is recognized as the current profits and losses; except the above, the deferred income tax assets confirmed that they are related to enterprise merger are included in the current profits and losses.

##### (c) Consolidated Financial Statements

Combination scope of consolidated financial statements includes the company and subsidiaries under its control. Control means that it has right to decide financial and operating policies of a company, and thereby gain benefits from operating activities of the company. Operating results and financial positions of subsidiaries controlled are included in consolidated financial statements from the commence date of control to the end date of control.



### 3. Main Accounting Policies and Significant Accounting Estimates (Continued)

#### (1) Enterprise Merger and Consolidated Financial Statements (Continued)

##### (c) Consolidated Financial Statements (Continued)

When subsidiaries obtained by enterprise merger under same control prepares their current financial statements in merger time, it is regarded that they are included in consolidation scope of the company since the time that the final control party of the company began to control subsidiaries merged, opening balance of consolidated financial statements and prior comparison statements is accordingly adjusted. When the company prepares consolidated financial statements, it includes all assets, liabilities and their book values of subsidiaries merged in consolidated balance sheet of the company, and include operating results of subsidiaries merged in the consolidated profit statement of the company since the time that the final control party of the company began to control subsidiaries merged.

When subsidiaries obtained by enterprise merger not under same control prepare their current financial statements in merger time, they adjust their financial statements on the basis of fair values of all identifiable assets, liabilities recognized on the acquisition date, and include assets, liabilities and operating results of subsidiaries acquired in financial statements of the company since the acquisition date.

When enterprise merger not under same control is realized by multiple transactions, for stocks of the acquiree held before the acquisition date, the Group re-measures them upon fair value of those stocks on the acquisition date, the difference between fair value and their book value shall be included in the current investment income. If stocks of the acquiree held before the acquisition date involve other comprehensive income, the other comprehensive income concerned is transferred as the current investment income of the acquisition date

Minority shareholders' equity and minority interests of subsidiaries shall separately present under owner's equity of consolidated balance sheet and under net profit of consolidated profit statement respectively.

If the current loss shared by minority shareholders of a subsidiary exceeds attributable shares of minority shareholders in opening owners' equity of the subsidiary, the balance offsets minority shareholders' equity.

When the accounting period or accounting policies adopted by subsidiaries is/are inconsistent with the ones in the company, necessary adjustment have been made for financial statements of subsidiaries as per accounting period or accounting policies of the company at merger. All major transactions within the Group at merger, including unrealized profit and balance on current account, have been offset. For unrealized loss incurred within internal transactions in the Group, if there are evidences to prove that the loss is related assets impairment loss, the whole amount should be recognized as loss.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (2) Foreign currency translation

When the Group receives capital with foreign currency invested by investor, it should be converted into RMB upon spot exchange rate of that day. When initial recognition is made for other foreign currency transactions, the other foreign currency should be converted into RMB upon the spot exchange rate or approximate exchange rate on transaction date.

The spot exchange rate refers to RMB foreign exchange rate issued by the People's Bank of China, foreign exchange rates issued by State Administration of Foreign Exchange or the cross rates in accordance with the issued foreign exchange rates. The approximate exchange rate of the spot exchange rate is the weighted average exchange rate similar to spot exchange rate of the transaction date decided as per the systematic and reasonable method.

The year-end foreign currency monetary items are converted as per the spot exchange rate on the date of the balance sheet. Except for the exchange balance between the special borrowing principals and interests relating to the acquisition and construction of assets meet the capitalization conditions (see Note 3(16)), other exchange rate balance are recorded as current profits and losses. The foreign currency non-monetary items measured in historical cost shall not change its currency of keeping accounts amount.

#### (3) Cash and cash equivalents

Cash and cash equivalents include the inventory cash and the deposit can be payable at any time, as well as the short-term, highly liquid investments that are readily convertible into known amounts of cash and that are subject to an insignificant risk of change in value.

#### (4) Inventories

Inventories shall be measured at the lower of cost and net realizable value.

Inventory cost includes purchasing cost, processing cost and other cost. Inventories are recorded upon actual cost obtained. Actual cost for inventories issued is measured by moving weighted average method. Costs of unfinished products and finished products also include direct labor cost and manufacturing overhead cost allocated by appropriate proportion except purchasing cost of raw materials.

The balance that the cost calculated as per single inventory items is higher than its net realizable value, is recorded into the inventories falling price loss. Net realizable value refers to the amount that the evaluated sales price of the inventory deduct the estimated cost to happen when completion of work, the estimated sales expenses and related tax fees.

Inventory accounting system of the Group is perpetual inventory system.

### 3. Main Accounting Policies and Significant Accounting Estimates (Continued)

#### (5) Long-term Equity Investment

##### (a) Investment in Subsidiaries

In consolidated financial statements of the Group, long-term equity investment in subsidiaries is handled upon note 3(1)(c).

In individual financial statement of the company, the initial measurement of investment cost of long-term equity investment in subsidiaries is made according to the following principles:

- for long-term equity investment in subsidiaries formed by enterprise merger not under same control realized by multiple transactions, the company takes the total of book value of equity investment of the acquiree held before the acquisition date and the new investment cost on the acquisition date as the initial investment cost of the whole investment. If the equity of the acquiree held before the acquisition date involves other comprehensive income, the company transfers the other comprehensive income concerned into the current investment income when handling the investment.
- for long-term equity investment in subsidiaries not formed by enterprise merger, the Group takes acquiring cost actually paid as initial investment cost for long-term equity investment obtained by cash at initial recognition. The Group takes fair value of equity securities issued as initial investment cost for long-term equity investment obtained by issue of equity securities. The Group shall take the price in investment contract or agreement as initial investment cost for long-term equity investment invested by investors.
- in individual financial statement, the company adopts cost method to make subsequent measurement for long-term equity investment in subsidiaries. Except cash dividends or profit which have been declared but unpaid included in payment actually paid or the price when obtaining investment, the company recognizes investment income by cash dividends or profit shared from the entity invested which have been declared to pay, and doesn't divide whether it belongs to net profit realized by the entity invested before and after investment. After the company recognizes investment income upon the above stipulations, it shall pay attention to whether book value of long-term equity investment exceeds book value of net assets (including goodwill concerned) shared in the entity invested, if it exceeds, impairment test for long-term equity investment shall be conducted upon accounting policies in note 3(10), if recoverable amount is lower than book value of long-term equity investment, impairment provision shall be made. The amount of cost less impairment provision (see note 3 (10)(c)) is included in the balance sheet at the end of period.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (5) Long-term equity investment

##### (b) Investment in Joint Venture and Associated Enterprise

Joint venture refer to enterprises that the Group and other investor jointly control it upon terms and conditions of contract. Joint control means common control for economic activities upon contract, it only exists when main finance and business policies related to economic activities require a consensus from all investors sharing control rights.

Associated enterprise refers to enterprises that the Group can exert significant impact on it. Significant impact means it has participation and decision rights for finance and business policies of entity invested, but it can not control or jointly control with other parties development of those policies.

Equity method shall be adopted for accounting of long-term equity investment in joint venture and associated enterprise.

Equity method is adopted to account long-term equity investment in joint ventures and associated enterprises.

The Group takes acquiring price actually paid as initial investment cost for long-term equity investment obtained by cash when initially recognizing investment in joint venture and associated enterprise.

When using equity method to measure, the Group's detailed accounting treatments include:

- If the initial cost of a long-term equity investment is more than the investing enterprise' attributable share of the fair value of the invested entity's identifiable net assets for the investment, the former is taken as the cost of the long-term equity investment; If the initial cost of a long-term equity investment is less than the investing enterprise' attributable share of the fair value of the invested entity's identifiable net assets for the investment, the later is taken as the cost of the long-term equity investment, the difference between the long-term equity investment and the initial investment cost shall be included in the current profits and losses.
- After the Group has obtained investment in joint venture and associated enterprise, according to attributable shares of net profit and loss realized by the entity invested, after it deducts amount straight-line amortized by original amortization period for investment in joint venture and associated enterprise held before first implementation of enterprise accounting standards which the debit balance of equity investment is recognized upon original accounting standards and regulations, recognizes investment income and adjusts book value of long-term equity investment. The Group appropriately decreases book value of long-term equity investment by attributable amount calculated upon profit or cash dividends declared to distribute by entity invested.

### 3. Main Accounting Policies and Significant Accounting Estimates (Continued)

#### (5) Long-term Equity Investment (Continued)

##### (b) Investment in Joint Venture and Associated Enterprise (Continued)

Specific accounting treatment includes the following in equity method accounting of the Group: (continued)

- The Group calculates attributable shares of net profit and loss realized by entity invested on the basis of fair value of all identifiable assets, etc. of entity invested when obtaining investment. If accounting policies or accounting period of entity invested is inconsistent with the ones in the Group, financial statements of entity invested have been necessarily adjusted upon accounting policies or accounting period of the Group by equity method accounting. The amount of profit and loss from internal transaction between the Group and associated enterprise and joint venture attributable to the Group calculated upon stock holding proportion shall be offset in equity method accounting. If there is evidence proves that unrealized loss caused by internal transaction is impairment assets related, the whole amount loss should be recognized
- For Net loss occurred in joint venture or associated enterprise, except that the Group shall assume obligation of additional loss, it is limited to long-term equity including book value of long-term equity investment and others materially forming the net investment in joint venture or associated enterprise by reducing to zero. For net profit subsequently realized by joint venture or associated enterprise, the Group shall recover to recognize attributable share of profit after it covers unrecognized attributable share of loss by attributable share of profit.
- the Group makes impairment provision for long-term equity investment upon note 3(10)(c) at the end of period.

##### (c) Other Long-term Equity Investment

Other long-term equity investment refers to long-term equity investment that there is no control, joint control, significant impact to entity invested, and there is no quotation in active market, and fair value can not be measured reliably.

The Group recognizes initial investment cost of this type investment according to the above initial cost recognition and measurement principle for investment in joint venture and associated enterprise, and adopts cost method (see note 3(5)(b)) to make subsequent measurement. Impairment provision for other long-term equity investment is made upon note 3(10)(b) at the end of period.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (6) Fixed assets and construction in process

Fixed assets refer to the tangible assets held by the Group for manufacturing goods, offering labor service, rent or operational management, with its service life exceeding one fiscal year.

Fixed assets are included in the balance sheet at cost or estimate value less accumulated depreciation and impairment provision (see note 3(10)). Construction in progress is included in the balance sheet at cost or estimate value less impairment provision (see note 3(10)).

Initial cost of purchased fixed assets includes purchasing price, taxes related and expenses which is incurred and attributable to the assets before the assets get to expected conditions for use. The initial cost of self-constructed fixed assets includes materials for construction, direct labor cost, borrowing cost meeting capitalization (see note 3(16)) and necessary expenditures which is incurred before the assets get to expected conditions for use.

When it reaches the expected conditions for use, the construction in process will transfer into fixed asset. The construction in process shall not be made depreciation.

The components of a fixed asset have different useful lives or bring economic benefits for the Group in different ways and to which different depreciation rates or depreciation methods apply, and they shall be recognized as fixed assets on an individual component basis by the Group.

If the subsequent expenses related to a fixed asset, including the relevant expenses of changing some parts of the fixed asset, when they meet the recognition conditions of fixed asset, they shall be included in the cost of fixed asset, meanwhile the book value of the replaced parts is deducted; the expenses related to the daily maintenance of the fixed assets shall be included in the current profits and losses.

The profit and loss for discard or disposal of fixed assets is the difference between disposal income and the book value of the fixed assets, it is recognized in the profits and losses statement at discard or disposal day. The Group depreciates fixed assets according to straight-line method within service life of fixed assets. Service lives and estimated net residual rates for various fixed assets are as following:

	<u>Service life</u>	<u>Estimated net residual rate</u>	<u>Depreciation Rate</u>
Houses and buildings	30 years	3%-5%	3.17-3.23%
Machinery and equipments	5-18 years	3%-5%	5.28-19.40%
Office equipments and others	5 years	3%-5%	19.00-19.40%
Transport facility	6 years	3%-5%	15.83-16.17%

The Group re-checks the service life of fixed assets, the estimated net residual value and depreciation method at least at the end of each year.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (7) Financial leasing

Leasing includes financial leasing and operating leasing. Financial leasing refers to the leasing no matter the ownership finally transferred or not, but in essence, all risks and remuneration relating to assets ownership has transferred. Operating leasing refers to other leasings except for financial leasing.

##### (a) Rented assets by financial leasing

The Group takes fair value of rented assets and the lowest lease payment present value on lease commence date, whichever is the lower, as the recorded value of fixed assets by financial leasing, takes the lowest lease payment as the recorded value of long-term accounts payable, and takes their difference as unrecognized financial expense. The Group records the initial direct expenses incurred for financial leasing in the value of the rented assets. Depreciation for assets by financing leasing is made upon the depreciation policy mentioned in note 3(6), and impairment provision is made upon the accounting policy mentioned in note 3(10)(c).

Where the rented assets ownership can be reasonably decided to obtain when the leasing period expires, the rented assets are accrued depreciation during the service life. Otherwise, it takes the less one of the leasing period of the leasing assets and the service life of the leasing assets to accrue depreciation.

The Group adopts actual interest rate to amortize the unrecognized financial costs within the different periods of leasing, and treats as per the borrowing costs principle (See Note 3(16)).

On the date of balance sheet, the Group will list the balance that the financial leasing related long-term accounts payable deduct unrecognized financial costs, as long-term liabilities and long-term liabilities are due within one year.

##### (b) Rented assets by operating leasing

The rental expenses of rented assets by operating leasing are recognized as cost or expense of related assets by straight-line method within the lease period. Contingent rental is included in the current profits and losses when it actually happens.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (8) Intangible assets

Intangible assets are included in the balance sheet at cost or estimate value less accumulated amortization and impairment provision (see note 3(10)). The Group amortizes the amount of intangible assets after deducting residual value and impairment provision from the cost or estimate value of intangible assets upon straight-line method within estimated service life for intangible assets with limited service lives. Amortization lives for all intangible assets are as following:

	<u>Service Life</u>
Land use right	50 years
Non-patent technology	5-10 years
Others	3-10 years

The Group takes the intangible assets with unexpectable future economic benefits period as intangible assets with uncertain service life, and doesn't make amortization for those intangible assets. The Group has no intangible assets with uncertain service life as of the date of the balance sheet.

Expenditures for internal research and development of the Group are divided into expenditures for research stage and expenditures for development stage. Research means planned survey with originality for obtaining and understanding new science or technical knowledges. Development means that research result or other knowledge is applied for one or more plans or designs before making commercial production or use, so as to produce new or materially improved materials, equipments, products or to obtain new processes, etc.

Expenditures for research stage are included in the current profits and losses when it happens. For expenditures for development stage, if a product or process, etc. formed by development is feasible in technology and commerce, and the Group has sufficient resources and intention to finish the development, the expenditures for development stage can be reliably measured, the expenditures for development stage can be capitalized. Capitalized development expenditures are included in the balance sheet at the value of cost less impairment provision (see note 3(10)). Other development expenses are recognized as expenses in the period when it happens.

#### (9) Financial instruments

Financial instruments of the Group include monetary funds, accounts receivable, accounts payable, loan and stocks, etc.

##### (a) Recognition of measurement of financial assets and financial liabilities

When financial asset and financial liability in the Group becomes a party to a financial instrument contract clause, it shall recognize in balance sheet.

The Group divides financial assets and financial liabilities into different categories upon purposes obtaining assets or assuming liabilities in initial recognition: financial assets and financial liabilities which are measured by fair value and their changes are included in the current profits and losses, loan and accounts receivable, investment held to expiry, financial assets available for sale and other financial liabilities.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

##### (a) Recognition of measurement of financial assets and financial liabilities (Continued)

The financial assets and financial liabilities initially recognized shall be measured at their fair values. For the financial assets and liabilities measured at their fair values and of which the variation is recorded into the profits and losses of the current period, the transaction expenses thereof shall be directly recorded into the profits and losses of the current period; for other categories of financial assets and financial liabilities, the transaction expenses thereof shall be included into the initially recognized amount. After initial recognition, the consequent measurements of the financial assets and financial liabilities are as follows:

- The financial assets and financial liabilities that are measured at the fair value and their changes are recorded into the profits and losses of the current period. (including transactional financial assets and financial liabilities)

After initial recognition, the financial assets and financial liabilities that are measured at the fair value and their changes are recorded into the profits and losses of the current period are measure at the fair value, the profits and losses formed by the fair value changes are recorded into the profits and losses of the current period.

##### • Loan and Accounts Receivable

The loan of the company mainly is entrusted loans. Entrusted loans mean that the Group provides funds, then financial institutes is on behalf of the Group to lend loans according to clients, purposes, amount, terms of loans, interest rate determined by the Group, and assists the Group to recover loans.

Entrusted loans shall be measured at amortized cost by effective interest rate method.

The Group calculates and recognizes interests at amortized cost of loan by effective interest rate method, and includes them in the profits and losses. If the due accrued interests can not be recovered, the Group shall stop to accrue interests of entrusted loans concerned, and make the original accrued interests offset the current profits and losses.

The Group makes impairment provision for entrusted loans (see note 3(10)(a)), and includes the amount deducting impairment provision in the balance sheet. The entrusted loans with less than one year (including one year) periods are listed in other current assets; others are listed in other non-current assets.

Accounts receivable refers to non-derivative financial assets which there are no quotations in active markets, recovery amount is fixed or can be determined.

Accounts receivable is measured at amortized cost by effective interest rate method after initial recognition.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

##### (a) Recognition and Measurement of Financial Assets and Financial Liabilities (Continued)

###### • Other Financial Liabilities

Other financial liabilities refer to the financial liabilities except the financial liabilities which are measured by fair value and their changes are included in the current profits and losses.

Other financial liabilities include financial guarantee contract liabilities. Financial guarantee contract liabilities refer to the contract that the Group, as guarantor and creditor, agrees that it shall implement liabilities or assume responsibilities when a debtor fails to fulfill its liabilities according to the contract. Financial guarantee contract liabilities make subsequent measurement at the amount deducting accumulated amortization from initial recognized amount and accrued liabilities determined upon principle of contingencies (see note 3(1)), whichever is the higher.

Other financial liabilities except the above shall be measured at amortized cost by effective interest rate method after initial recognition.

##### (b) Determination of Fair Value

The Group adopts the quotation in active markets to determine the fair value of financial assets with active markets, and doesn't deduct the transaction fee which might be occurred in future disposal of the financial assets. The quotation of financial assets held or financial liabilities planning to assume is the current offer. The quotation of financial assets planning to purchase or financial liabilities assumed is the current price.

##### (c) Terminate recognition of the financial assets and financial liabilities

When the contract rights of cash flow that receiving a certain financial asset terminated or all risks and remuneration has transferred, the Group terminates to recognize the financial asset.

If the transfer of an entire financial asset satisfies the conditions for stopping recognition, the difference between the amounts of the following 2 items shall be recorded in the profits and losses of the current period by the Group:

- The book value of the transferred financial asset;
- The sum of consideration received from the transfer, and the accumulative amount of the changes of the fair value originally recorded in the owner's equities.

Where the current obligations of the financial liabilities have fully or partially rescinded, the Group stops to confirm the financial liabilities or part of the liabilities.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) Impairment Provisions for Financial Assets and Non-financial Long-term Assets

##### (a) Impairment of financial assets

The Group checks the book value of financial assets on the date of balance sheet, except for the financial assets measured at their fair values and of which the variation is recorded into the profits and losses of the current period, there are objective evidence to show that the financial asset has impairment, a provision for the asset impairment shall be made.

##### • Loan and Account Receivable

Individual method is used to assess impairment loss for loan. Individual method and combined method are simultaneously used to assess impairment loss for account receivable.

If present values discounted by original effective interest rate for estimated future cash flow (excluding future credit loss not having occurred) of loan and accounts receivables are lower than their book values when using individual method to make assessment, the Group will reduce book values of the loan and accounts receivables to the present value, the amount reduced is recognized as impairment loss of assets and included in the current profits and losses.

When using combination way to evaluated the impairment loss of accounts receivable, the amount of impairment loss is adjusted and recognized in accordance with the previous loss experiences of the accounts receivable with similar credit risks features (including accounts receivable that not happened impairment evaluated in the individual way), and also the observable data that reflects the current economic situation.

After the accounts receivable recognized impairment loss, if there are objective evidences showing that the financial asset value has recovered, and objectively are related to the matters occurred after recognized the loss, the Group shall reverse the originally recognized impairment loss, and record into the current profits and losses. The switched back value shall not exceed the amortized cost on the switched back date, suppose under the circumstances of no provisions for impairment.

##### (b) Impairment of other long-term equity investments

Other long-term equity investments (see Note 3(5) (c)) use individual way to evaluate impairment loss.

When other long-term equity investments has impairment, the Group shall recognize the balance as the impairment loss between the book value of other long-term equity investments and the current value that confirmed by the current market return against the future discounted cash flow in accordance with the similar financial assets, and record into the current profits and losses. And the impairment loss will not be switched back.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) Impairment Provisions for Financial Assets and Non-financial Long-term Assets (Continued)

##### (c) Impairment of Other Non-financial Long-term Assets

The Group, on the date of balance sheet, in accordance with the internal and external information, determines whether the following assets have signs of impairment, include:

- Fixed assets
- Projects in process
- - Intangible assets
- - Long-term equity investments on subsidiaries and joint companies, etc.

The Group makes impairment test on the assets with impairment signs, and evaluate the recoverable amount of the assets.

The assets group is the minimum assets combination that can be recognized, the cash flow it produced is basically independent from other assets or assets group. The assets group is made up of the related assets that create the cash flow. When recognizing an asset group, it shall take into consideration whether the asset group to create independent cash flow, simultaneously, how the managements manage the production and business activities, and the ways of decision-making for the use or disposal of the assets, etc.

The recoverable amount refers to assets (or an asset group, combination of asset group, similarly hereinafter) determined on the basis of the higher one of the net amount of the fair value of the asset minus the disposal expenses and the current value of the expected future cash flow of the asset.

The net amount of the fair value of an asset minus the disposal expenses shall be determined in light of the amount of the basis of the price as stipulated in the sales agreement in the fair transaction minus the disposal expenses directly attributable to the asset. The current value of the expected future cash flow of an asset shall be determined by the discounted cash with an appropriate pre-tax discount rate, on the basis of the expected future cash flow generated during the continuous use or final disposal of an asset.

Where the measurement result of the recoverable amount indicates that an asset's recoverable amount is lower than its carrying value, the carrying value of the asset shall be recorded down to the recoverable amount, and the reduced amount shall be recognized as the loss of asset impairment and be recorded as the profit or loss for the current period. Simultaneously, a provision for the asset impairment shall be made accordingly. The impairment loss related to asset group or combination of asset group shall first charge against the carrying value of the headquarter' assets and business reputation which are apportioned to the asset group or combination of asset groups, then charge it against the carrying value of other assets in proportion to the weight of other assets in the asset group or combination of asset groups with the business reputation excluded. However, the carrying value of each asset after charging against shall not be lower than the highest one of the following three: the net amount of the fair value of the asset minus the disposal expenses (if determinable), the current value of the expected future cash flow of the asset (if determinable), and zero.

Once the assets depreciation loss is recognized, they shall not be switched back in the future accounting period.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (11) Employee Compensation

Payroll of Employees refers to various remunerations and other expenditures that the Group shall pay to employees for obtaining service rendered by them. Except dismissal compensations, the Group recognizes payroll payable as liability and appropriately increase assets cost or current expenses during accounting period when employees render service to it.

##### (a) Retirement Benefits

According to relevant laws and regulations in China, the Group has insured basic social security organized and enforced by local labor and social security authority for employees. The Group pays social security premium to local basic social security agency as per social security payment base and proportion stipulated. Social security premium paid to basic social security agency is included in assets cost or the current profits and losses according to accrual basis principle. Labor and social security departments have responsibility to pay basic social pension to retired employees after they retired. The Group no longer has other payment obligations related to basic social security premium.

In addition, the Group also provides supplementary retirement benefits to retired employees who retired on or before Dec. 31, 2007. Employees of the Group who retired after Dec. 31, 2007 no longer enjoy supplementary retirement benefits. The responsibility for supplementary retirement benefits assumed by the Group is calculated by estimated future post-retirement benefits that the Group promises to pay for employees by actuarial method. The present value of those benefits shall be determined through discount by discount rate. Discount rate refers to the return of the similar national debt of China on the date of the balance sheet during expiry date and the period that Group assumes responsibilities. When calculating the responsibilities of the Group, any amount of accumulation exceeding 10% of current responsibility value is amortized within the period of planned future expected service life of benefits, otherwise, actuarial profit or loss can't be recognized.

##### (b) Housing Fund and Other Social Insurance Fees

Except retirement benefits, the Group pays housing fund and social insurance fees such as basic medical insurance, unemployment insurance, employment injury insurance and maternity insurance for on job employees according to relevant laws, regulations and policies. The Group accrues or pays housing fund and above social insurance fees to authorities concerned upon a certain proportion of payroll of employees every month, and include them in the current profits and losses upon accrual basis principle.

##### (c) Early retirement welfare

When the early retirement plan meets the following conditions, it shall be recorded as estimated liabilities, and recorded as the current profit and loss:

- The Group has formulated formal early retirement plan and is going to put into practice;
- The Group cannot withdraw the plan or agreement unilaterally.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (12) Income Taxes (Continued)

Except that income taxes influence related to the transactions or events directly recorded in the owner's equity shall be recorded into the owner's rights and interests by the Group, the income taxes of the current period and deferred income taxes expenses (incomes) are recorded into the current profits and losses.

The current income tax is adjusted in accordance with taxable income of the year, the expected payable amount of income taxes calculated according to the tax law, plus the income tax payable of the previous year.

On the date of balance sheet, if the Group has the statutory rights to settle in net amount, and is intended to settle in net amount or obtain assets and liquidate liabilities simultaneously, the current income tax assets and liabilities are listed in the deducted net amount.

The deferred income tax assets and liabilities are determined in light of the deductible temporary difference and tax payable temporary difference. The temporary difference refers to the difference between the book value of the assets or liabilities and the taxation basis, including the losses deductible and tax deduction that can be carry forward the future years. The recognition of deferred income tax assets takes the taxable income amount as the limit that is likely to obtain to offset the deductible temporary difference.

If it is not enterprise combination transaction and when transaction occurs, it affect neither accounting profits nor the taxable income amount (or deductible losses), the temporary difference in the transaction will not produce deferred income tax. The temporary difference resulted from initial recognition of goodwill would not produce the relevant deferred income tax.

On the balance sheet date, the Group measures the book value of the deferred income tax assets and liabilities in light of the expected recover or settle ways, in accordance the provisions of the issued tax law, as per the tax rate applicable to the period during which the assets are expected to be recovered or the liabilities are expected to be settled.

The Group shall re-examine the book value of deferred income tax assets on the balance sheet date. If it is unlikely to obtain sufficient taxable income taxes to offset the benefit of the deferred income tax assets, the book value of the deferred income tax assets shall be written down. When it is probable to obtain sufficient taxable income taxes, such write-down amount shall be subsequently reversed.

On the date of balance sheet, the deferred income tax assets and liabilities are presented in the in the deducted net amount when meeting the following conditions simultaneously:

- The taxpayer has the statutory rights to settle the current income tax assets and liabilities in net amount;
- And the deferred income tax assets and the liabilities are related to the tax income levied by the same tax levying department on the same taxpayer or related to different taxpayers, but during every deferred income tax asset or liability reversed period of significance, the taxpayers concerned are intended to settle the current income tax assets and liabilities in net amount or obtain assets, liquidate liabilities simultaneously.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (13) Estimated debts and contingent debts

If the obligation pertinent to contingencies is a current obligation of the Group, and it is likely to cause any economic benefit to flow out of the Group as a result of performance of the obligation, and the relevant amount can be measured in a reliable ways, the Group shall recognize them as estimated debts. The estimated debts that greatly affect the monetary time value shall be determined in the amount after estimated future cash flow discount.

A potential obligation caused by past transactions or events and whose existence will be confirmed only by the occurrence or non-occurrence of uncertain future events; or a current obligation caused by a past transaction or event but is not recognized because the performance of the obligation is not likely to incur an outflow of economic benefits from the Group or because the amount of the obligation cannot be measured in a reliable way, the Group shall disclose the potential obligation or current obligation as contingent debts.

#### (14) Revenue recognition

The revenue refers to the gross inflow of economic benefits formed during the course of the ordinary activities of the Group, which may increase the owner's equities and is irrelevant to the invested capital of the owner. When the amount and the relevant costs of the revenue can be measured in a reliable way, the relevant economic benefits may flow into the Group, and the following recognition conditions of different types of revenues are met simultaneously, the revenue are recognized.

##### (a) Revenues from Sales of Goods

The Group recognizes revenues from sales of goods when they simultaneously meet above general recognition conditions and the following conditions:

- The Group has transferred main risks and rewards of goods ownership to the buyer;
- The Group neither keeps continuous management right commonly related to ownership, nor implement effective control to goods sold;

The Group recognizes revenues from sales of goods upon fair value of contract or agreement price received or receivable.

##### (b) Income from Rendering of Service

The group recognizes income from rendering of service upon fair value of contract or agreement price received or receivable.

If result of transaction for rendering of service can be reliably estimated on the date of the balance sheet, income from rendering of service shall be recognized upon completion percentage method. The completion process for rendering service transaction shall be determined by the proportion of cost incurred to total estimated cost.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (14) Revenues Recognition (Continued)

##### (b) Income from Rendering of Service (Continued)

If result of transaction for rendering of service can't be reliably estimated, and labor cost incurred estimatedly can be compensated, income from rendering of service is recognized upon labor cost incurred, and labor cost is transferred by same amount. If labor cost incurred estimatedly can not be compensated, labor cost incurred is recorded into the current profits and losses, and income from rendering of service is not recognized.

##### (c) Interest Income

Interest income is calculated and determined upon time and effective interest rate of monetary fund lent.

#### (15) Government subsidies

Government subsidies refer to monetary assets or non-monetary assets which the Group freely obtains from government, but not including the capital invested in the Group by government as investor. In earmarks such as investment allowance from government, etc., if that allowance shall be treated as capital surplus upon the state relevant regulations, it also belongs to nature of capital investment other than government subsidies.

The government subsidies shall not be recognized until they can meet the conditions for the government subsidies; and can obtain the government subsidies.

If a government subsidy is a monetary asset, it shall be measured in the light of the received or receivable amount. If a government subsidy is a non-monetary asset, it shall be measured at its fair value.

The government subsidies pertinent to assets shall be recognized as deferred income by the Group, and equally distributed within the useful lives of the relevant assets, and included in the current profits and losses. The government subsidies pertinent to incomes if used for compensating the related future expenses or losses of the enterprise shall be recognized as deferred income by the Group and shall be included in the current profits and losses during the period when the relevant expenses are recognized; if used for compensating the related expenses or losses incurred to the Group shall be directly included in the current profits and losses.

#### (16) Borrowing costs

Where the borrowing costs incurred to the Group can be directly attributable to the acquisition and construction of assets eligible for capitalization, it shall be capitalized and recorded into the costs of relevant assets.

Other borrowing costs shall be recognized as expenses on the basis of the actual amount incurred, and shall be recorded into the current profits and losses.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (16) Borrowing costs (Continued)

During the period of capitalization, the to-be-capitalized amount of interests (including the amortization of discounts or premiums) in each accounting period shall be determined according to the following provisions:

- For special borrowings used to construct assets eligible for capitalization, the Group determines it by interests calculated upon effective interest rate in the current period of special borrowings less interest income gained from unused borrowings fund deposited into bank or investment income obtained from temporary investment.
- For general borrowings occupied for construction of assets eligible for capitalization, the Group calculates and determines the interests to be capitalized from general borrowings by weighted average of assets expenditures (the amount by accumulated assets expenditures less special borrowing) multiply by capitalization rate of occupied general borrowings. Capitalization rate is calculated and recognized by real interest rate from weighted average upon general borrowings. The Group determines effective interest rate of borrowings by the following: it is the interest rate used to discount the future cash flow of borrowings in expected duration or a shorter applicable period into the determined amount of the borrowings at initial recognition. The exchange balance from principal and interests of foreign currency special borrowings is capitalized during capitalization period, and is included in assets cost eligible for capitalization. The exchange balance from principal and interests of other foreign currency borrowings except foreign currency special borrowings is recognized as financial expense and is included in the current profits and losses.

The capitalization period shall refer to the period from the commencement to the cessation of capitalization of the borrowing costs, excluding the period of suspension of capitalization of the borrowing costs. When assets expenditure and the borrowing costs have occurred and the necessary acquisition and construction or production activities have started to make the assets to be ready for the intended use or sale, the borrowing costs start capitalization. When the qualified asset under acquisition and construction or production is ready for the intended use or sale, the capitalization of the borrowing costs shall be ceased. Where the acquisition and construction or production of a qualified asset is interrupted abnormally and the interruption period lasts for more than 3 months, the capitalization of the borrowing costs shall be suspended by the Group.

#### (17) Profits distribution

After the balance sheet date, the planned to distribute dividends or profits in the profits distribution plan after consideration and approval, are not recognized as liabilities on the balance sheet date, are disclosed in the Note separately.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (18) Affiliated Parties

When a party controls, jointly controls or exercises significant influence over another party, or when two or more parties are under the control, joint control or significant influence of the same party, the affiliated party relationships are constituted. The affiliated party can be an individual or an enterprise. Enterprises only under the control of the state but without other affiliated party relations do not constitute the affiliated party of the Group. The affiliated parties of the Group and the Company include, but not limited to:

- (a) The parent company of the Company;
- (b) The subsidiaries of the Company;
- (c) Other enterprises under the control of the same parent company of the Company;
- (d) The investors having joint control over or having significant influence on the Company;
- (e) The enterprises or individuals under the control and joint control of the same party with the Group;
- (f) The joint ventures of the Group, including the subsidiaries of the joint ventures;
- (g) The associated enterprises of the Group, including the subsidiaries of the associated enterprises;
- (h) The main individual investors and the close family members of the Group;
- (i) Key managerial personnel or and the close family members of the Group;
- (j) Key managerial personnel in the parent company of the Company;
- (k) Key managerial personnel or and the close family members of the parent company of the Company;
- (l) Other enterprises that the Group's main individual investors, key managerial personnel, or close family members of such individual control, jointly control over.

#### (19) Main accounting estimates and judgment

When preparing financial statements, the managements of the Group need to use estimates and assumptions, which will affect the application of the accounting policies, and the amount of the assets, liabilities, income and expenses. The actual situations might be different from these estimates. The managements of the Group shall make consecutive evaluations on the key assumptions relating to estimates and the judgment of uncertain factors, the affects of the accounting estimates changes shall be recognized in the current period of the changes and the future periods.

Except for the data on the assumptions and risks factors of employee compensation retirement welfare and early retirement welfare, financial instruments fair value stipulated in Note 23 and Note 43 the uncertain factors of other main estimated amount are as follows:

- (a) Impairment of accounts receivable



As stated in Note 3(10) (a), the Group examines the accounts receivable that are measured in accordance with the amortized cost, to evaluate whether impairment occur or not, and evaluates the concrete amount of the depreciation loss when have impairment. The objective evidences of depreciation include showing the observable data of the estimated future cash flow for individual or combination accounts receivable, showing the observable data that the debtor's financial position occurs main negative changes in the individual or combination accounts receivable, etc. if evidences shows that the objective evidences of the depreciation change in the previous year, the value of the relevant accounts receivable has recovered, it shall reverse the originally recognized depreciation loss.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (19) Main accounting estimates and judgment (Continued)

##### (b) Impairment of Non-financial Long-term Assets

As mentioned in note 3(10), the Group assesses impairment of non-financial long-term assets on the date of the balance sheet, so as to determine whether the recoverable amount of assets falls below the book value. If the situation shows that the book value of long-term assets may not be able to recover in whole, it is deemed that related assets have impaired, and impairment loss should be appropriately recognized.

Recoverable amount is the net value of fair value of assets (or assets group) less disposal expenses or the present value of expected future cash flow of assets (or assets group), whichever is the higher. Because the Group can not reliably get the open market price of assets (or assets group), it can not reliably and accurately estimate fair value of assets (or assets group). When the Group estimates present value of future cash flow, it's necessary to make major judgment for assets' (or assets group's ) yield, sale price, related operating cost and discount rate used for calculation of present value. The Group adopts all related information which can be obtained to estimate recoverable amount, including forecast for yield, sale price and related operating cost from reasonable and supportable hypothesis.

##### (c) Depreciation and Amortization

As mentioned in notes 3(6) and 3(8), the Group depreciates and amortizes fixed assets and intangible assets by straight-line method within their service lives under consideration of their residual values. The Group regularly reviews available service lives, so as to determine the depreciation and amortization to be included in every report period. The Group determines service lives according to past experience for similar assets and expected technology changes. If there are significant changes on prior estimation, depreciation and amortization shall be adjusted in future periods.

##### (d) Product Quality Warranty

As mentioned in note 27, the Group will undertake estimated liabilities to after-sale quality and maintenance provided to clients for sale, maintenance and reformation of locomotives, vehicles and spare parts. Recent maintenance experience data in the Group has been considered for estimation of liabilities. But recent maintenance experience may not be able to reflect future situations of maintenance. Any increase or decrease of the provision may affect profits and losses of future years.

#### 4. Statement for Changes of Accounting Policies

##### (1) Changes of Accounting Policies and Influence

The Group has changed the following main accounting policies according to requirements in <No.4 Interpretation for Enterprise Accounting Standards> issued by Ministry of Finance in 2010. Such changes have no influence on the Group and financial statements of the Group in 2010.

- In enterprise merger not under same control, the accounting treatment of enterprise merger transaction fees incurred in the acquirer for enterprise merger is as following:

The Group, as the acquirer, included enterprise merger transaction fees (excluding transaction fees of equity securities or debt securities issued for merger price, similarly hereinafter) incurred for enterprise merger in enterprise merger cost during enterprise merger not under same control before Jan. 1<sup>st</sup>, 2010. The Group includes the enterprise merger transaction fees in the current profits and losses since Jan. 1<sup>st</sup>, 2010.

Above changes of accounting police were in force since Jan. 1<sup>st</sup>, 2010, no retrospective adjustment is made.

- The accounting treatment of the acquiree's equity held before acquisition date for enterprise merger not under same control realized by multiple transactions is as following:

The Group would adjust book value of long-term equity investment on acquisition date for long-term equity investment accounted by equity method held prior to the acquisition date in enterprise merger not under same control realized by multiple transactions before Jan. 1<sup>st</sup>, 2010, and adjust the book value of related long-term equity investment to initial acquisition cost.

The Group takes the total of book value of equity investment of the acquiree held before the acquisition date and new investment cost on the acquisition date as the initial investment cost for whole investment in the individual financial statement since Jan. 1<sup>st</sup>, 2010. If the equity of the acquiree held before the acquisition date involves in other comprehensive income, the Group transfers related other comprehensive income to the current investment income when disposing investment. In consolidated financial statements, the Group shall remeasure the equity of the acquiree held before the acquisition date upon fair value on the acquisition date, the difference between fair value and its book value is included in the current investment income. If the equity of the acquiree held before the acquisition date involves in other comprehensive income, the Group transfers that other comprehensive income to the current investment income on the acquisition date.

Above changes of accounting police were in force since Jan. 1<sup>st</sup>, 2010, no retrospective adjustment is made.



#### 4. Statement for Changes of Accounting Policies (Continued)

##### (1) Changes of Accounting Policies and Influence (Continued)

- Accounting treatment of deferred income tax assets arising from enterprise merger in the acquirer during accounting merger is as following:

Before Jan. 1<sup>st</sup>, 2010, deferred income tax assets arising from deductible temporary differences of the acquiree obtained by the Group in enterprise merger were not recognized as deferred income tax assets due to not eligible for recognition conditions of deferred income tax assets on the acquisition date. If economic benefits resulting from related deductible temporary differences are able to be realized in future periods, the Group recognizes them as deferred income tax assets, and decreases income tax in the profit statement, meanwhile decreases goodwill to the amount that it should be under the condition provided that such deferred income tax assets would have been recognized on the acquisition date. The amount of goodwill written-down is taken as impairment loss of assets in the balance sheet.

After Jan.1<sup>st</sup>, 2010, for the above, when the Group recognizes the deferred income tax assets related to enterprise merger, simultaneously decreases income tax in the profit statement. Except that new or further information showing that the above situations concerned have existed on the acquisition date is obtained within 12 months after the acquisition date, and the economic benefits resulting from deductible temporary differences are expected to be realized in the acquiree, when the Group recognizes related deferred income tax assets, simultaneously decreases goodwill other than write-down. The difference is recognized as the current profits and losses.

The above changes of accounting policies have no influence on the Group.

- In consolidated financial statement, the current loss attributable to minority shareholders of subsidiary exceeds shares attributable to minority shareholders in opening balance of owner's equity in such subsidiary

Before Jan.1<sup>st</sup>, 2010, when the current loss attributable to minority shareholders of subsidiary exceeds shares attributable to minority shareholders in opening balance of owner's equity in such subsidiary in consolidated financial statement, except the amount that articles of association or agreements stipulate that minority shareholders should have obligations to undertake and minority shareholders have ability to cover, the remainder shall offset owner's equity of parent company. After Jan. 1<sup>st</sup>, 2010, when the current loss attributable to minority shareholders of subsidiary exceeds shares attributable to minority shareholders in opening balance of owner's equity in such subsidiary, the balance shall still offset minority shareholders' equity.

The above changes of accounting policies have no influence on the Group.

## 5 Taxes

(1) The Group's applicable taxes relating to products sales and providing services are operating tax, value-added tax, urban maintenance and construction tax and extra charges of education funds, etc.

<u>Tax categories</u>	<u>Taxation standards</u>
Operating tax	5% of the operating revenue taxable
Urban maintenance and construction tax	7% of the actually paid operating tax, value-added tax
Extra charges of education funds	3% of the actually paid operating tax, value-added tax

Value-added tax	Out tax	is calculated as per 13%-17% of income from selling goods and taxable services the in accordance with provisions of the tax laws. after deduct the allowable deducted input tax, the balance is the value-added tax payable
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### (2) Income tax

The statutory tax rate of the Company is 25%, the year carried out at the preferential tax rate 15% (in 2009 : 15%). In accordance with the approval of [2008] No. 124 Document issued by Department of Science and Technology of Jilin Province, the Company was identified and designated as high-tech enterprise, and got the No. GR200822000009 Designation of High-Tech Enterprises, and enjoys tax preferential of 15%.

The Company's other subsidiaries' income tax rate of this year is 25% (in 2009 25%).

### (3) Tax payable

<u>The Group</u>	<u>At beginning of year</u> RMB: Yuan	<u>Taxes Payable in</u> <u>Current Year</u> RMB: Yuan	<u>Taxes Paid in</u> <u>Current Year</u> RMB: Yuan	<u>At end of year</u> RMB: Yuan
Value-added tax payable	80,861,715.33	5,435,392.27	83,745,467.45	2,551,640.15
Operating tax payable	2,360,819.68	3,034,466.74	4,292,131.97	1,103,154.45
Income tax payable	995,176.61	62,735,484.23	61,406,936.37	2,323,724.47
Urban maintenance and construction tax and extra charges of education funds payable	13,167,005.59	841,555.59	13,461,068.60	367,492.58

Others payable	12,877,101.28	104,598,571.87	84,949,979.26	32,525,693.89
Total	110,261,818.49	176,645,470.70	248,035,583.65	38,871,705.54

### This Company

	<u>At beginning of year</u> RMB: Yuan	<u>Taxes Payable</u> <u>in Current Year</u> RMB: Yuan	<u>Taxes Paid in</u> <u>Current Year</u> RMB: Yuan	<u>At end of year</u> RMB: Yuan
Value-added tax payable	80,554,984.28	161,950.88	80,716,935.16	-
Operating tax payable	2,299,099.68	2,519,817.74	4,009,022.97	809,894.45
Income tax payable	-	56,304,322.33	56,304,322.33	-
Urban maintenance and construction tax and extra charges of education funds payable	13,123,405.47	269,078.95	13,309,848.26	82,636.16
Others payable	12,813,589.07	96,309,188.10	76,853,762.38	32,269,014.79
Total	108,791,078.50	155,564,358.00	231,193,891.10	33,161,545.40

### 6 Combined Financial Statement

(1) The branch companies which has been contained in scope of this company's combined financial statement on Dec. 31, 2010 are as follows:

(a) Branch company got by combination through different controlling enterprises.

<u>Name of company</u>	This company's direct and indirect <u>Share holding rate</u>	This company's direct and indirect <u>Voting right rate</u>	<u>Registration capital</u>	<u>Investment sum</u>	<u>Class</u>	<u>Type of company</u> Note a	<u>Audit Agreement</u> Note b
Chongqing Changchun passenger rail vehicle co., Ltd. ("Chongqing Changchun passenger")	51%	51%	100,000,000	51,686,732.02	Four class	Cisborder non-financial branch company	Standard



Note a: type of enterprise: 1. Domestic Non-financial Subsidiary      2. Domestic Financial Subsidiary  
3. Overseas Subsidiary      4. Institutions      5. Construction Entity

Note b: "Standard" in type of audit opinions refers to standard audit report.

The company originally held 20% shares of Chongqing Changchun Railway Vehicles Co., Ltd., and acquired 31% shares of Chongqing Changchun Railway Vehicles Co., Ltd. by payment of RMB35,172,300.00 yuan on Jan. 6<sup>th</sup>, 2010. Shareholding ratio gets to 51% after acquisition.

<u>Name of company</u>	<u>This company's direct and indirect Share holding rate</u>	<u>This company's direct and indirect Voting right rate</u>	<u>Registration capital</u> RMB Yuan	<u>Investment sum</u> RMB Yuan	<u>Class</u>	<u>Type of company</u>	<u>Audit Agreement</u>
Changchun passenger rail vehicle science and technology development Co., Ltd. ("science and technology company")	52.73%	52.73%	11,000,000.00	5,800,000.00	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle imports and exports Co., Ltd. ("Imports and Exports Company")	95%	95%	20,000,000.00	19,110,373.63	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle foundry and forging Co., Ltd. ("Foundry and Forging Company")	100%	100%	29,867,622.50	42,583,845.35	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle Parts Sale Co., Ltd. ("Parts Company")	100%	100%	800,000.00	800,000.00	Four class	Cisborder non-financial branch company	Standard

## 6. Consolidated Financial Statement (Continued)

### (2) Enterprise Merger under Same Control Occurred in the Current Year

The company took 737,666,214 shares (RMB 1.00 yuan par value per share) of equity paid as combination cost, and obtained 100% equity of CRC Group by merger method. The book value of net assets of CRC Group was RMB1,751,908,292.65 yuan on merger date.. The opening undistributed profit of the Group decreased RMB18,669,087.23 yuan due to such enterprise merger under same control.

According to < Assets Evaluation Report for Project of Changchun Railway Vehicles Co., Ltd. Fundraise and Merging CNR Changchun Railway Vehicles Co., Ltd.> (ZZER[2010] No. 78) issued by Zhongzi Assets Assessment Co., Ltd on June 25<sup>th</sup>, 2010, net asset value per share was RMB2.533 yuan on Dec. 31<sup>st</sup>, 2009 of the base date of assets evaluation. CNR newly increased 737,666,214 shares of common stocks by above stock exchange rate upon net assets evaluation amount on Dec. 31<sup>st</sup>, 2009 in CRC, 175,689,344, shares of common stocks of the company originally held by CRC Group were simultaneously written off.

After cancellation of CRC Group, the company, as the surviving corporation after merger completion, succeeded all business, assets, liabilities and debts of CRC Group.

CRC Group was a limited liability company established in Changchun City, Jilin Province on Aug. 8, 2008. Its headquarters was in Changchun. It mainly engaged in research and development, design, test, manufacture, service of rail passenger train, trainset, urban rolling stocks and products of related components, and sales, technical service of related products, etc. CRC Group and the company are finally controlled by CNR collectively.

CRC Group performed relevant stipulations in <Enterprise Accounting Standards> and other disclosure requirements before merger. The accounting policies adopted by it were same as the ones adopted by the company. Financial information of CRC Group on merger date was as following:

	<u>From Jan. 1<sup>st</sup>, 2010 to Merger Date</u>
	RMB Yuan
Revenue	-
Net Loss	21,422,620.12
Net Cash Outflow	116,578,454.49

6. Consolidated Financial Statement (Continued)

(2) Enterprise Merger under Same Control Occurred in Current Year (Continued)

Book values of assets and liabilities were as following:

	<u>On Merger Date</u>	<u>On Dec.31<sup>st</sup>, 2009</u>
	RMB Yuan	RMB Yuan
Monetary Fund	24,791,994.43	141,370,448.92
Accounts Receivable	-	317,579.64
Prepayment	408,864,403.82	353,551,234.81
Other Receivables	1,359,436.17	659,059.04
Inventory	5,509,574.62	45,450,713.72
Other Current Assets	93,511,558.56	43,271,788.48
Long-term Equity Investment	360,414,459.03	360,414,459.03
Fixed Assets	810,014,558.24	98,928.27
Construction in Progress	1,256,905,393.80	913,846,702.14
Construction Materials	112,858,190.63	182,826,417.49
Long-term Unamortized Expenses	3,412,555.69	3,983,583.00
Total Assets	3,077,642,124.99	2,045,790,914.54
Accounts Payable	30,889,615.10	12,283,222.35
Taxes Payable	1,519,827.09	-
Interests Payable	-	2,043,236.25
Other Payables	73,124,390.15	47,933,543.17
Long-term Loan	1,135,000,000.00	125,000,000.00
Other Non-current Liabilities	85,200,000.00	85,200,000.00
Total liabilities	1,325,733,832.34	272,460,001.77
Net Assets	1,751,908,292.65	1,773,330,912.77



## 6. Consolidated Financial Statement (Continued)

### (3) Enterprise Merger not under Same Control Occurred in the Current Year

The company acquired 31% equity of Chongqing CRC by payment of RMB35,172,300.00 yuan as combination cost on Jan. 6<sup>th</sup>, 2010 of the acquisition date. Total combination cost on the acquisition date was RMB35,172,300.00 yuan.

The fair value of merger price had been evaluated by Chongqing Daxin Real Estate Land Assets Assessment Co., Ltd. The Assets Evaluation Report with Chong Daxin ER (2009) No. 00010 was issued on April 30<sup>th</sup>, 2009.

The fair value of 31% equity of Chongqing CRC obtained by the Group in merger was RMB35,172,300.00 yuan on the acquisition date.

Chongqing Changchun Railway Vehicles Co., Ltd is a company established in Chongqing on Jan. 16<sup>th</sup>, 2007. Its headquarters is in Yuzui county, Jiangbei district, Chongqing city. It mainly engages in design, manufacture, sale and relevant technology consultation of urban rail transit vehicles. Chongqing Mechanical & Electrical Holding (Group) Company and Chongqing Development and Investment Co., Ltd respectively held 40% shares of Chongqing CRC, the Group held 20% shares by special technology investment before merger which was past through directors to vote in board resolution.

The financial information of Chongqing Changchun Railway Vehicles Co., Ltd was as following:

	<u>From Jan.6<sup>th</sup>, 2010(the acquisition date)</u> <u>to Dec. 31<sup>st</sup>, 2010</u>
	RMB Yuan
Revenue	27,654,578.00
Net Loss	34,181,810.44
Net Cash Inflow	10,202,657.45

6. Consolidated Financial Statement (Continued)

(3) Enterprise Merger not under Same Control Occurred in the Current Year (Continued)

The situations of identifiable assets and liabilities were as following:

	<u>On Jan. 6<sup>th</sup>, 2010</u>		<u>On Dec. 31<sup>st</sup>, 2010</u>	
	<u>(the acquisition date)</u>			
	Book Value RMB: Yuan	Fair Value RMB: Yuan	Book Value RMB: Yuan	Fair Value RMB: Yuan
Monetary Fund	9,493,614.26	9,493,614.26	9,493,614.26	9,493,614.26
Accounts Receivable	18,764,800.00	18,764,800.00	18,764,800.00	18,764,800.00
Prepayment	1,648,742.78	1,648,742.78	1,648,742.78	1,648,742.78
Other Receivables	43,746,484.66	43,746,484.66	43,746,484.66	43,746,484.66
Inventory	562,088.01	562,088.01	562,088.01	562,088.01
Other Current Assets	1,801,357.51	1,801,357.51	1,801,357.51	1,801,357.51
Fixed Assets	162,125,726.07	193,012,598.24	162,125,726.07	193,012,598.24
Construction in Progress	17,894,177.24	17,894,177.24	17,894,177.24	17,894,177.24
Intangible Assets	45,116,791.97	45,116,791.97	45,116,791.97	45,116,791.97
Development Expenditure	216,756.03	216,756.03	216,756.03	216,756.03
Total Identifiable Assets	301,370,538.53	332,257,410.70	301,370,538.53	332,257,410.70
Short-term Loan	114,000,000.00	114,000,000.00	114,000,000.00	114,000,000.00
Accounts Payable	20,731,932.41	20,731,932.41	20,731,932.41	20,731,932.41
Payroll Payable	710,640.08	710,640.08	710,640.08	710,640.08
Other Payables	145,805.95	145,805.95	145,805.95	145,805.95
Long-term Loan	73,000,000.00	73,000,000.00	73,000,000.00	73,000,000.00
Other Non-current Liabilities	10,210,000.00	10,210,000.00	10,210,000.00	10,210,000.00
Total Identifiable liabilities	218,798,378.44	218,798,378.44	218,798,378.44	218,798,378.44
Net Identifiable Assets	82,572,160.09	113,459,032.26	82,572,160.09	113,459,032.26

If above identifiable assets have active markets, their fair values shall be determined upon quotations in active markets. If above identifiable assets have no active markets, but same or similar assets have active markets, their fair values shall be determined by referring to market price of same or similar assets. If their same or similar assets also have no active markets, their fair values shall be determined by estimate technology.

Amount payables or present values of amount payables shall be taken as fair values of above identifiable liabilities.

Chongqing Changchun Railway Vehicles Co., Ltd. has no disposal or ready for disposal assets and liabilities after merger.

Because the Group originally held 20% equity of ChongQing CRC before the merger. The merger belongs to enterprise merger not under same control realized by multiple transactions. The fair value of the equity of the acquiree held by the Group before the acquisition date is RMB22,691,806.45 yuan on the acquisition date.

## 7 Currency Capital

<u>This group</u>	<u>Balance at the end of year</u>		<u>Balance at beginning of year</u>	
	Original currency	RMB / Equivalent RMB	Original currency	RMB / Equivalent RMB
Cash				
RMB	-	132,671.00	-	26,765.18
Bank deposit				
RMB	-	282,782,429.35	-	254,244,035.54
Dollar	101,843.82	674,481.06	41,191,768.81	281,265,635.79
Euro	1,125,900.28	9,915,240.82	2,731,889.59	26,764,595.50
Yen	2,580,628.00	209,701.83	30,769,570.00	2,270,240.41
HK Dollar	21,625,131.81	18,401,473.41	103,554,812.64	91,180,012.53
Swiss Franc	-	-	25,229.50	166,358.28
Total		<u>312,115,997.47</u>		<u>655,917,643.24</u>

On Dec. 31, 2010, 1 HKD was converted into RMB 0.8509 Yuan (2009: 0.8805 Yuan); 1 USD was converted into RMB 6.6227 Yuan (2009: 6.8282 Yuan); 1 EURO was converted into RMB 8.8065 Yuan (2009: 9.7971 Yuan); 1 YEN as converted into RMB 0.0813 Yuan (2009: 0.0738 Yuan) ;

On Dec. 31, 2010, this group and this company have no capital of holding in pledge, freeze and etc. which could change current limitation or exit potential recover risk.

<u>This company</u>	<u>Balance at the end of year</u>		<u>Balance at beginning of year</u>	
	Original currency	RMB / Equivalent RMB	Original currency	RMB / Equivalent RMB
Cash				
RMB		77,841.84		2,239.87
Bank deposit				
RMB		216,150,718.37		90,380,607.81
Dollar	97,109.64	643,128.01	41,187,040.03	281,233,346.73
Euro	61,958.21	545,634.98	2,614,670.30	25,616,186.40
Yen	1,580,627.00	128,441.75	29,769,570.00	2,196,458.41
HK Dollar	21,625,131.81	18,401,473.41	103,554,812.64	91,180,012.53
Swiss Franc			25,229.50	166,358.28
Total		<u>235,947,238.36</u>		<u>490,775,210.03</u>



## 7 Currency Capital (Continuation)

On Dec. 31, 2010, 1 HKD was converted into RMB 0.8509 Yuan (2009: 0.8805 Yuan); 1 USD was converted into RMB 6.6227 Yuan (2009: 6.8282 Yuan); 1 EURO was converted into RMB 8.8065 Yuan (2009: 9.7971 Yuan); 1 YEN as converted into RMB 0.0813 Yuan (2009: 0.0738 Yuan) ;

On Dec. 31, 2010, this group and this company have no capital of holding in pledge, freeze and etc. which could change current limitation or exit potential recover risk.

## 8 Bill Receivable

<u>This group</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	-	1,500,000.00
Total	-	1,500,000.00
<u>This company</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	-	1,500,000.00
Total	-	1,500,000.00

Bills receivable before will all become due in one year.

## 9 Account Receivable

(1) Account receivable in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginnin of year</u> RMB Yuan
Related company receivable	48,363,101.67	371,559,522.84
Other customers	683,821,586.83	1,192,083,568.05
Subtotal	732,184,688.50	1,563,643,090.89
Reduce: bad account reserve	17,389,067.61	13,558,373.75
Total	714,795,620.89	1,550,084,717.14

## 9 Account Receivable (Continuation)

(1) Account receivable in according to customer type is analyzed as follows: (Continuation)

This company	Amount at the end of year	Amount at beginning of year
	RMB Yuan	RMB Yuan
Branch company receivable	114,738,277.60	33,516,753.24
Other related companies receivable	47,779,307.07	363,569,443.13
Other customers	543,503,407.92	1,135,541,032.41
Subtotal	706,020,992.59	1,532,627,228.78
Reduce: bad account reserve	15,534,882.09	12,559,311.98
Total	690,486,110.50	1,520,067,916.80

(2) Account receivable aging and bad account reserve analysis as follows:

This Group	Amount at the End of the Year		Amount at the Beginning of the Year	
	Book Balance	Bad Debts	Book Balance	Bad Debts
	RMB Yuan	Provision	RMB Yuan	Provision
		RMB Yuan		RMB Yuan
Specific identification method adopted				
Accounts receivable for provision of bad debts	-	-	-	-
Combination test method adopted				
Accounts receivable for provision of bad debts	732,184,688.50	17,389,067.61	1,563,643,090.89	13,558,373.75
Total	732,184,688.50	17,389,067.61	1,563,643,090.89	13,558,373.75

Accounts receivable for provision of bad debts with combination test method adopted

This Group	Amount at the End of the Year			Amount at the Beginning of the Year		
	Book Balance	Percentage	Bad Debts	Book Balance	Percentage	Bad Debts
	RMB Yuan		Provision	RMB Yuan		Provision
			RMB Yuan			RMB Yuan
Within 1 year (inclusive 1 year)	613,382,938.76	83.8%	-	1,470,204,746.50	94.0%	-
1-2 years (inclusive 2 years)	88,551,782.24	12.1%	8,855,178.22	58,881,193.36	3.8%	5,888,119.34
2-3 years (inclusive 3 years)	24,163,128.58	3.3%	4,832,625.72	32,027,737.00	2.0%	6,405,547.40
3-4 years (inclusive 4 years)	6,086,838.92	0.8%	3,701,263.67	2,529,414.03	0.2%	1,264,707.01
Total	732,184,688.50	100%	17,389,067.61	1,563,643,090.89	100%	13,558,373.75

Account age shall be calculated from the day when accounts receivable are confirmed.

Accounts receivable of this Group has no provision of bad debts in full amount.



## 9 Accounts receivable (continued)

(2) Age of accounts receivable and provision of bad debts are analyzed as shown below (continued):

Provision of bad debts for accounts receivable turned back this year is RMB 9,066,848.89 Yuan, and the turning back reasons is the collection of accounts receivable for provision of bad debts that have been already withdrawn for the previous years.

It has no accounts receivable that has been cancelled actually this year.

It has no accounts receivable generated from related transaction that has been cancelled actually this year.

It has no overdue notes receivable transferred into accounts receivable this year.

<u>This Company</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	<u>Book Balance</u> RMB Yuan	<u>Bad Debts</u> <u>Provision</u> RMB Yuan	<u>Book Balance</u> RMB Yuan	<u>Bad Debts</u> <u>Provision</u> RMB Yuan
Specific identification method adopted				
Accounts receivable for provision of bad debts	-	-	-	-
Combination test method adopted				
Accounts receivable for provision of bad debts	<u>706,020,992.59</u>	<u>15,534,882.09</u>	<u>1,532,627,228.78</u>	<u>12,559,311.98</u>
Total	<u>706,020,992.59</u>	<u>15,534,882.09</u>	<u>1,532,627,228.78</u>	<u>12,559,311.98</u>

Accounts receivable for provision of bad debts with combination test method adopted

<u>This Company</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	<u>Book Balance</u> RMB Yuan	<u>Percentage</u>	<u>Bad Debts</u> <u>Provision</u> RMB Yuan	<u>Book Balance</u> RMB Yuan	<u>Percentage</u>	<u>Bad Debts</u> <u>Provision</u> RMB Yuan
Within 1 year (inclusive 1 year)	597,770,480.39	84.6%	-	1,449,179,502.09	94.5%	-
1-2 years (inclusive 2 years)	85,991,162.40	12.2%	8,599,116.24	48,890,575.66	3.2%	4,889,057.57
2-3 years (inclusive 3 years)	16,172,510.88	2.3%	3,234,502.18	32,027,737.00	2.1%	6,405,547.40
3-4 years (inclusive 4 years)	<u>6,086,838.92</u>	<u>0.9%</u>	<u>3,701,263.67</u>	<u>2,529,414.03</u>	<u>0.2%</u>	<u>1,264,707.01</u>
Total	<u>706,020,992.59</u>	<u>100%</u>	<u>15,534,882.09</u>	<u>1,532,627,228.78</u>	<u>100%</u>	<u>12,559,311.98</u>

Account age shall be calculated from the day when accounts receivable are confirmed.

It has no provision of bad debts withdrawn in full within the accounts receivables of this Group.

Provision of bad debts for accounts receivable turned back this year is RMB 9,066,848.89 Yuan, and the turning back reasons is the collection of accounts receivable for provision of bad debts that have been already withdrawn for the previous years.

It has no accounts receivable that has been cancelled actually this year.

It has no accounts receivable generated from related transaction that has been cancelled actually this year.

It has no overdue notes receivable transferred into accounts receivable this year.

## 9 Accounts receivable (continued)

### (3) Accounts receivable creditor's right transfer matters:

According to the creditor's rights transfer contract made by This Company and the bank and verification of related contract terms, This Company will transfer accounts receivable totaling RMB 876.37 million Yuan to the bank; and from the date of transfer (i.e. from the day when the bank makes payment to This Company with the transfer prices), the bank shall give up all rights of recourse to This Company and directly request the accounts receivable debtor to perform obligations. Accordingly, in the balance of accounts receivable of this Group and This Company on Dec. 31, 2010, it does not include the unsettled part of the above accounts receivable that have been already transferred, totaling RMB 876.37 million Yuan. By Dec. 31, 2010, the corresponding cost expenditure of this Group and This Company confirmed is RMB 10.46 million Yuan.

## 10 Advanced Payment Account

(1) Advanced payment account in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment related company	416,994,972.60	484,139,792.73
Other customers	2,324,496,412.58	1,370,491,556.08
Subtotal	2,741,491,385.18	1,854,631,348.81
Reduce: bad account reserve	128,688.03	-
Total	2,741,362,697.15	1,854,631,348.81

<u>This Company</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment branch company	222,179,486.90	-
Advanced payment Other related company	415,706,100.60	315,290,750.51
Other customers	2,310,478,265.89	1,184,432,483.24
Subtotal	2,948,363,853.39	1,499,723,233.75
Reduce: bad account reserve	-	-
Total	2,948,363,853.39	1,499,723,233.75

10 Advance payment (continued)

(2) Advance payment account age and provision of bad debts are analyzed as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance	Bad Debts	Book Balance	Bad Debts
	RMB Yuan	Provision	RMB Yuan	Provision
		RMB Yuan		RMB Yuan
Specific identification method adopted				
Advance payment for provision of bad debts	-	-	-	-
Combination test method adopted				
Advance payment for provision of bad debts	<u>2,741,491,385.18</u>	<u>128,688.03</u>	<u>1,854,631,348.81</u>	<u>-</u>
Total	<u>2,741,491,385.18</u>	<u>128,688.03</u>	<u>1,854,631,348.81</u>	<u>-</u>

Advance payment for provision of bad debts with combination test method adopted

<u>This Group</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance	Bad Debts	Book Balance	Bad Debts
	RMB Yuan	Provision	RMB Yuan	Provision
		RMB Yuan		RMB Yuan
Within 1 year (inclusive 1 year)	2,740,204,504.93	-	1,854,631,348.81	-
1-2 years (inclusive 2 years)	<u>1,286,880.25</u>	<u>128,688.03</u>	<u>-</u>	<u>-</u>
Total	<u>2,741,491,385.18</u>	<u>128,688.03</u>	<u>1,854,631,348.81</u>	<u>-</u>

Advance payment account age and provision of bad debts are analyzed as shown below:

Account age shall be calculated from the day when advance payment is confirmed.

<u>This Company</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance	Bad Debts	Book Balance	Bad Debts
	RMB Yuan	Provision	RMB Yuan	Provision
		RMB Yuan		RMB Yuan
Specific identification method adopted				
Advance payment for provision of bad debts	-	-	-	-
Combination test method adopted				
Advance payment for provision of bad debts	<u>2,948,363,853.39</u>	<u>-</u>	<u>1,499,723,233.75</u>	<u>-</u>
Total	<u>2,948,363,853.39</u>	<u>-</u>	<u>1,499,723,233.75</u>	<u>-</u>



## 10 Advance payment (continued)

(2) Advance payment account age and provision of bad debts are analyzed as shown below (continued):

Advance payment for provision of bad debts with combination test method adopted

<u>This Company</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance	Bad Debts	Book Balance	Bad Debts
	RMB Yuan	Provision	RMB Yuan	Provision
		RMB Yuan		RMB Yuan
Within 1 year (inclusive 1 year)	<u>2,948,363,853.39</u>	-	<u>1,499,723,233.75</u>	-
Total	<u>2,948,363,853.39</u>	-	<u>1,499,723,233.75</u>	-

Account age shall be calculated from the day when advance payment is confirmed.

This Company has no advance payment with account age exceeding 1 year.

## 11 Other receivables

(1) Other receivables are analyzed according to customer classification, as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>	<u>Amount at the Beginning of</u>
	RMB Yuan	the Year RMB Yuan
Receivable from related companies	832,147.58	20,624,509.20
Other customers	<u>90,940,054.20</u>	<u>54,027,656.99</u>
Sub-total	91,772,201.78	74,652,166.19
Less: Bad debts provision	<u>2,640,467.52</u>	<u>3,706,719.20</u>
Total	<u>89,131,734.26</u>	<u>70,945,446.99</u>

# 11 Other receivables (continued)

(1) Other receivables are analyzed according to customer classification, as shown below (continued):

<u>This Group</u>	<u>Amount at the End of the Year</u>	<u>Amount at the Beginning of</u>
	RMB Yuan	the Year RMB Yuan
Receivable from subsidiaries	-	-
Receivable from related companies	832,147.58	20,624,509.20
Other customers	<u>85,951,895.13</u>	<u>49,119,361.87</u>
Sub-total	86,784,042.71	69,743,871.07
Less: Bad debts provision	<u>2,534,236.84</u>	<u>3,466,141.02</u>
Total	<u>84,249,805.87</u>	<u>66,277,730.05</u>

(2) Other receivable account age and provision of bad debts are analyzed as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance RMB Yuan	Bad Debts Provision RMB Yuan	Book Balance RMB Yuan	Bad Debts Provision RMB Yuan
Specific identification method adopted				
Advance payment for provision of bad debts	-	-	-	-
Combination test method adopted				
Advance payment for provision of bad debts	<u>91,772,201.78</u>	<u>2,640,467.52</u>	<u>74,652,166.19</u>	<u>3,706,719.20</u>
Total	<u>91,772,201.78</u>	<u>2,640,467.52</u>	<u>74,652,166.19</u>	<u>3,706,719.20</u>

# 11 Other receivables (continued)

(2) Other receivable account age and provision of bad debts are analyzed as shown below (continued):

Other receivables for provision of bad debts with combination test method adopted

<u>This Group</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance RMB Yuan	Percentage	Bad Debts Provision RMB Yuan	Book Balance RMB Yuan	Percentage	Bad Debts Provision RMB Yuan
Within 1 year (inclusive 1 year)	68,729,932.42	74.9%	-	42,730,525.92	57.2%	-
1-2 years (inclusive 2 years)	22,100,396.24	24.1%	2,210,039.62	28,956,457.70	38.8%	2,895,645.77
2-3 years (inclusive 3 years)	328,485.25	0.4%	65,697.05	2,571,726.19	3.5%	514,345.24
Above 3 years	<u>613,387.87</u>	<u>0.6%</u>	<u>364,730.85</u>	<u>393,456.38</u>	<u>0.5%</u>	<u>296,728.19</u>
Total	<u>91,772,201.78</u>	<u>100%</u>	<u>2,640,467.52</u>	<u>74,652,166.19</u>	<u>100%</u>	<u>3,706,719.20</u>

It has no provision of bad debts withdrawn in full within the other receivables of this Group.

Provision of bad debts for other receivables turned back this year is RMB 3,059,127.78 Yuan, and the turning back reasons is the collection of other receivables for provision of bad debts that have been already withdrawn for the previous years.

It has no other receivable that has been cancelled actually this year.

It has no other receivable generated from related transaction that has been cancelled actually this year.

It has no advance payment transferred into other receivable this year.

<u>This Company</u>	<u>Amount at the End of the Year</u>		<u>Amount at the Beginning of the Year</u>	
	Book Balance RMB Yuan	Bad Debts Provision RMB Yuan	Book Balance RMB Yuan	Bad Debts Provision RMB Yuan
Specific identification method adopted				
Other receivables for provision of bad debts	-	-	-	-
Combination test method adopted				
Other receivables for provision of bad debts	<u>86,784,042.71</u>	<u>2,534,236.84</u>	<u>69,743,871.07</u>	<u>3,466,141.02</u>
Total	<u>86,784,042.71</u>	<u>2,534,236.84</u>	<u>69,743,871.07</u>	<u>3,466,141.02</u>

Other receivables for provision of bad debts with combination test method adopted

<u>This Company</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance RMB Yuan	Percentage	Bad Debts Provision RMB Yuan	Book Balance RMB Yuan	Percentage	Bad Debts Provision RMB Yuan
Within 1 year (inclusive 1 year)	63,992,516.50	73.7%		38,225,121.71	54.8%	-
1-2 years (inclusive 2 years)	22,052,544.00	25.4%	2,205,254.40	28,956,457.70	41.5%	2,895,645.77
2-3 years (inclusive 3 years)	328,485.25	0.4%	65,697.05	2,368,835.28	3.4%	473,767.06
Above 3 years	<u>410,496.96</u>	<u>0.5%</u>	<u>263,285.39</u>	<u>193,456.38</u>	<u>0.3%</u>	<u>96,728.19</u>
Total	<u>86,784,042.71</u>	<u>100%</u>	<u>2,534,236.84</u>	<u>69,743,871.07</u>	<u>100%</u>	<u>3,466,141.02</u>



## 11 Other receivables (continued)

(2) Other receivable account age and provision of bad debts are analyzed as shown below (continued):

Account age shall be calculated from the day when other receivables are confirmed.

It has no provision of bad debts withdrawn in full within the other receivables of this Group.

Provision of bad debts for other receivable turned back this year is RMB 2,859,127.78 Yuan, and the turning back reasons is the collection of other receivable for provision of bad debts that have been already withdrawn for the previous years.

It has no other receivable that has been cancelled actually this year.

It has no other receivable generated from related transaction that has been cancelled actually this year.

It has no advance payment transferred into other receivable this year.

## 12 Inventory

<u>This group</u>	<u>Book Balance at the</u> <u>Beginning of the</u> <u>Year</u>	<u>Amount</u> <u>Increased</u> <u>This</u> <u>Year</u>	<u>Amount</u> <u>Decreased</u> <u>This</u> <u>Year</u>	<u>Book Balance at</u> <u>the End of the</u> <u>Year</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Original material	1,604,561,868.45	13,216,845,303.44	11,843,393,451.71	2,978,013,720.18
Self-produced semi-manufactures and product in produce (product in study )	1,038,424,885.81	13,263,625,098.25	8,730,358,054.21	5,571,691,929.85
Inventory goods (product finished)	4,354,133.72	8,751,063,504.88	8,741,419,537.18	13,998,101.42
Surplus materials (package good, low value easily consumed goods etc.)	10,349,757.30	177,829,045.53	179,532,133.29	8,646,669.54
Others	11,253,258.27	174,996,569.71	80,161,819.15	106,088,008.83
Subtotal	2,668,943,903.55	35,584,359,521.81	29,574,864,995.54	8,678,438,429.82
Less : Inventory falling price reserves	-	16,217,548.37	9,658,615.68	6,558,932.69
Total	2,668,943,903.55	35,568,141,973.44	29,565,206,379.86	8,671,879,497.13

In this group's inventory yearend balance has no loan expense capitalization sum.

This Company has no inventory used for guarantee at the end of the year.

<u>This company</u>	<u>Book Balance at the</u> <u>Beginning of the</u>	<u>Amount</u> <u>Increased</u> <u>This</u>	<u>Amount Decreased</u> <u>This Year</u>	<u>Book Balance at</u> <u>the End of the</u>
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	<u>Year</u>	<u>Year</u>	<u>Year</u>	<u>Year</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Original material	1,561,428,756.73	13,160,443,130.13	11,760,737,719.85	2,961,134,167.01
Self-produced semi-manufactures and product in produce (product in study)	1,014,444,322.30	13,217,005,283.27	8,676,125,098.02	5,555,324,507.55
Inventory goods (product finished)	-	8,526,657,523.33	8,526,657,523.33	-
Surplus materials (package good, low value easily consumed goods etc.)	10,349,757.30	177,829,045.53	179,532,133.29	8,646,669.54
Others	11,253,258.27	174,996,441.50	80,161,690.94	106,088,008.83
Subtotal	2,597,476,094.60	35,256,931,423.76	29,223,214,165.43	8,631,193,352.93
Less : Inventory falling price reserves	-	11,383,485.11	4,824,552.42	6,558,932.69
Total	2,597,476,094.60	35,245,547,938.65	29,218,389,613.01	8,624,634,420.24

## 12 Inventory (Continuation)

In this group's inventory yearend balance has no loan expense capitalist sum.

This Company has no inventory used for guarantee at the end of the year.

Inventory rise down reserve analyzed as follows:

<u>This group</u>	<u>Book</u>	<u>Balance</u>	<u>Amount</u>	<u>Amount Decreased This Year</u>			<u>Book</u>
	<u>at</u>	<u>the</u>	<u>Increased</u>				<u>Balance at</u>
	<u>Beginning</u>	<u>of</u>	<u>This Year</u>				<u>the End of</u>
	<u>the Year</u>		<u>RMB Yuan</u>				<u>the Year</u>
	<u>RMB Yuan</u>			<u>Return back</u>	<u>Re-sale</u>	<u>Other</u>	<u>RMB Yuan</u>
				<u>RMB Yuan</u>	<u>RMB Yuan</u>	<u>decreases</u>	
						<u>RMB Yuan</u>	
Self-produced	-	16,217,548.37	-	9,658,615.68	-	6,558,932.69	-
semi-manufactures							
and product in produce							
(product in study )							
Total	-	16,217,548.37	-	9,658,615.68	-	6,558,932.69	-

<u>This company</u>	<u>Book</u>	<u>Balance</u>	<u>Amount</u>	<u>Amount Decreased This Year</u>			<u>Book</u>
	<u>at</u>	<u>the</u>	<u>Increased</u>				<u>Balance at</u>
	<u>Beginning</u>	<u>of</u>	<u>This Year</u>				<u>the End of</u>
	<u>the Year</u>		<u>RMB Yuan</u>				<u>the Year</u>
	<u>RMB Yuan</u>			<u>Return back</u>	<u>Re-sale</u>	<u>Other decreases</u>	<u>RMB Yuan</u>
				<u>RMB Yuan</u>	<u>RMB Yuan</u>	<u>RMB Yuan</u>	
Self-produced	-	11,383,485.11	-	4,824,552.42	-	6,558,932.69	-
semi-manufactures							
and product in produce							
(product in study )							
Total	-	11,383,485.11	-	4,824,552.42	-	6,558,932.69	-

## 13 Other Current Asset

<u>This group</u>	<u>Paper value at the end of year</u>	<u>Paper value at beginning of year</u>
	<u>RMB</u>	<u>RMB</u>
Appreciation tax to be deducted	355,763,655.64	43,282,848.45
Prepayment of VAT	-	3,134,428.63
Enterprise income tax to be prepaid	1,187,530.08	7,950,245.01
Entrusted loans	-	200,000,000.00
Total	356,951,185.72	254,367,522.09
<u>This company</u>	<u>Paper value at the end of year</u>	<u>Paper value at beginning of year</u>
	<u>RMB</u>	<u>RMB</u>



Appreciation tax to be deducted	341,439,257.54	-
Enterprise income tax to be prepaid	1,187,530.08	7,950,245.01
Entrusted loans	-	200,000,000.00
Total	<u>342,626,787.62</u>	<u>207,950,245.01</u>

14 Long-term Share Right Investment

<u>This group</u>	<u>Paper balance at beginning of year</u> RMB Yuan	<u>Current increase sum</u> RMB Yuan	<u>Current decrease sum</u> RMB Yuan	<u>Paper balance at The end of year</u> RMB Yuan
Long-term share right Investment				
-Invest on co-operation company	219,039,894.38	12,756,299.89	-	231,796,194.27
- Investment to associated company	16,514,432.02	-	16,514,432.02	-
-Invest on other companies	16,847,249.19	-	-	16,847,249.19
Subtotal	252,401,575.59	12,756,299.89	16,514,432.02	248,643,443.46
Reduce: depreciation reserve	-	-	-	-
Total	252,401,575.59	12,756,299.89	16,514,432.02	248,643,443.46
<u>This company</u>	<u>Paper balance at beginning of year</u> RMB Yuan	<u>Current increase sum</u> RMB Yuan	<u>Current decrease sum</u> RMB Yuan	<u>Paper balance at The end of year</u> RMB Yuan
Long-term share right Investment				
-Invest on branch company	68,294,218.98	51,686,732.02	-	119,980,951.00
-Invest on co-operation company	219,039,894.38	12,756,299.89	-	231,796,194.27
- Investment to associated company	16,514,432.02	-	16,514,432.02	-
-Invest on other companies	16,847,249.19	-	-	16,847,249.19
Subtotal	320,695,794.57	64,443,031.91	16,514,432.02	368,624,394.46
Reduce: depreciation reserve	-	-	-	-
Total	320,695,794.57	64,443,031.91	16,514,432.02	368,624,394.46

Details on every branch company, please see note 6(1).

#### 14 Long-term Share Right Investment (Continuation)

(1) On Dec. 31, 2010, this group and this company's analyzed on main co-operation company investment are as follows:

Co-operation company	Registered Place	Business Nature	Registered capital RMB 10K	This group/ company Share holding rate	This group/ company in investment unit's Voting right rate	Balance in the end of year		Current year	
						Total asset sum	Total debt sum	Total operation income sum	Net profit
						RMB 10K	RMB 10K	RMB 10K	RMB 10K
Changchun Bombardier Rail Vehicle Co., Ltd.	Changchun	Manufacturing Industry	23,945	30%	30%	167,770	61,474	37,012	2,731

Important accounting policy, accounting evaluation of co-operation and this group & this company have no serious difference.

(2) On Dec. 31, 2010, this Group and this Company have no associated company.

(3) Major equity investment calculated as per cost

This group and this company					
Company's name to be invested	Initial investment cost	Balance at Beginning of year	Current increase	Current decrease	Balance at the end of year
Teheran Vehicle Manufacturing Company	16,847,249.19	16,847,249.19	-	-	16,847,249.19

This Group and This Company holds 20% shares of Teheran Vehicles Manufacturing Co. (hereinafter called Teheran Co.), and remittance of profits from some investments is restricted by the national laws and regulations of Iran. Cost method is used for accounting.

(4) Important share right investment accounted by rights law

This Group and This Company



<u>Name of invested units</u>	<u>Initial amount</u>	<u>Balance at the beginning of the year</u>	<u>Changes in investment cost</u>	<u>Changes in regulation of profit and loss</u>		<u>Other owner's equity changes</u>	<u>Balance at the end of the year</u>
				Accrued profit and loss	Paid-in dividends of this year		
Changchun CRC-Bombardier Railway Vehicles Co., Ltd.	83,491,832.10	219,039,894.38	-	12,756,299.89	-	-	231,796,194.27

## 15 Fixed assets

This Group	Book Balance at the Beginning of the Year RMB Yuan	Amount Increased This Year RMB Yuan	Amount Decreased This Year RMB Yuan	Book Balance at the End of the Year RMB Yuan
Cost or assessment value				
House and building structure	1,105,533,865.30	707,058,025.11	233,104.94	1,812,358,785.47
Machinery and equipment	1,507,802,827.51	559,045,960.94	36,557,211.47	2,030,291,576.98
Transportation means	65,828,376.36	18,077,495.66	45,136.00	83,860,736.02
Office equipment and other equipment	<u>83,449,118.30</u>	<u>68,527,595.75</u>	<u>147,297.00</u>	<u>151,829,417.05</u>
Total	<u>2,762,614,187.47</u>	<u>1,352,709,077.46</u>	<u>36,982,749.41</u>	<u>4,078,340,515.52</u>
Less: Accumulated depreciation				
House and building structure	294,246,430.70	60,916,782.65	129,436.45	355,033,776.90
Machinery and equipment	664,233,907.16	147,667,386.32	34,361,762.58	777,539,530.90
Transportation means	35,057,872.05	11,352,094.15	43,781.92	46,366,184.28
Office equipment and other equipment	<u>29,844,406.14</u>	<u>18,861,477.09</u>	<u>142,212.15</u>	<u>48,563,671.08</u>
Total	<u>1,023,382,616.05</u>	<u>238,797,740.21</u>	<u>34,677,193.10</u>	<u>1,227,503,163.16</u>
Book value				
House and building structure	811,287,434.60			1,457,325,008.57
Machinery and equipment	843,568,920.35			1,252,752,046.08
Transportation means	30,770,504.31			37,494,551.74
Office equipment and other equipment	<u>53,604,712.16</u>			<u>103,265,745.97</u>
Total	<u>1,739,231,571.42</u>			<u>2,850,837,352.36</u>

In 2010, the original values of this Group transferred from construction in progress to fixed assets are RMB 1,199,811,397.76 Yuan;

On Dec. 31, 2010, the original values of fixed assets of this Group with depreciation being withdrawn completely but being used continuously are RMB 209,704,451.77 Yuan.

On Dec. 31, 2010, this Group has no major fixed assets that are kept temporarily idle.

In 2010, the original values, net values and losses of discarded fixed assets of this Group are RMB 36,982,749.41 Yuan, 2,305,556.31 Yuan, and 1,444,184.13 Yuan, respectively.

In 2010, in the newly increased accumulated depreciations of this Group, the depreciation expenses withdrawn for the current year are RMB 236,572,056.97 Yuan.

On Dec. 31, 2010, this Group has no fixed assets used for mortgage and guarantee.

# 15 Fixed assets (continued)

<u>This Company</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased This</u> <u>Year</u> RMB Yuan	<u>Amount Decreased This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the End</u> <u>of the Year</u> RMB Yuan
Cost or assessment value				
House and building structure	1,105,533,865.30	636,422,157.10	233,104.94	1,741,722,917.46
Machinery and equipment	1,495,431,110.24	540,245,047.62	24,185,494.20	2,011,490,663.66
Transportation means	59,707,150.24	11,835,363.82	45,136.00	71,497,378.06
Office equipment and other equipment	<u>82,251,774.57</u>	<u>46,1104,377.39</u>	<u>69,647.00</u>	<u>128,286,504.96</u>
Total	<u>2,742,923,900.35</u>	<u>1,234,606,945.93</u>	<u>24,533,382.14</u>	<u>3,952,997,464.14</u>
Less: Accumulated depreciation				
House and building structure	294,246,430.70	57,866,917.31	129,436.45	351,983,911.56
Machinery and equipment	651,861,530.25	146,735,879.82	21,990,045.31	776,607,364.76
Transportation means	32,036,461.99	9,020,602.33	43,781.92	41,013,282.40
Office equipment and other equipment	<u>29,432,903.41</u>	<u>16,060,303.49</u>	<u>66,891.65</u>	<u>45,426,315.25</u>
Total	<u>1,007,577,326.35</u>	<u>229,683,702.95</u>	<u>22,230,155.33</u>	<u>1,215,030,873.97</u>
Book value				
House and building structure	811,287,434.60			1,389,739,005.90
Machinery and equipment	843,569,579.99			1,234,883,298.90
Transportation means	27,670,688.25			30,484,095.66
Office equipment and other equipment	<u>52,818,871.16</u>			<u>82,860,189.71</u>
Total	<u>1,735,346,574.00</u>			<u>2,737,966,590.17</u>

In 2010, the original values of This Company transferred from construction in progress to fixed assets are RMB 342,154,992.22 Yuan;

On Dec. 31, 2010, the original values of fixed assets of This Company with depreciation being withdrawn completely but being used continuously are RMB 207,976,787.73 Yuan.

On Dec. 31, 2010, This Company has no major fixed assets that are kept temporarily idle.

In 2010, the original values, net values and losses of discarded fixed assets of This Company are RMB 24,533,382.14 Yuan, 2,303,226.81 Yuan, and 1,446,513.63 Yuan, respectively.

In 2010, in the newly increased accumulated depreciations of This Company, the depreciation expenses withdrawn for the current year are RMB 209,539,440.75 Yuan.

On Dec. 31, 2010, This Company has no fixed assets used for mortgage and guarantee.

On Dec. 31, 2010, This Company has no major fixed assets ready for disposal.



## 15 Fixed assets (continued)

On Dec. 31, 2010, fixed assets rented by this Group and This Company in financing lease modes are as shown below:

This Group and This Company

	<u>Machinery and equipment</u> RMB Yuan
At the end of the year	62,293,126.27
Costs	
Less: Accumulated depreciation	62,296,126.27
Less: Provision for asset impairment	<u>1,320,116.70</u>
	-
Book value	<u>60,973,009.57</u>
At the beginning of the year	-
Costs	-
Less: Accumulated depreciation	-
Less: Provision for asset impairment	-
	-
Book value	<u>-</u>

## 16 Construction in progress

On Dec. 31, 2010, book balance of construction in progress of This Company at the end of the year is given below with the following ten largest items:

Project Name	Budgetary Amount RMB Yuan	Percentage of Project Input in Budget (%)	<u>Amount at the Beginning of the Year</u>		<u>Increase in Current Year</u>		<u>Decrease in Current Year</u>		<u>Amount at the End of the Year</u>			Capital Source	
			Balance RMB Yuan	Interest	Total RMB Yuan	Where,	Total RMB Yuan	Where,	Balance RMB Yuan	Interest	Provision for Impairment of Assets RMB Yuan		
				Capitalization		Interest		Increased Fixed		Capitalization			
				Amount RMB Yuan		Amount RMB Yuan		Assets RMB Yuan		Amount RMB Yuan			
Total	3,871,868,529.80	-	1,345,854,754.30	14,816,002.31	-2,022,794,947.27	12,976,160.73	1,199,811,397.76	1,199,811,397.76	2,168,838,303.81	20,547,668.20	-	-	
Where, Test line section 2 project	152,970,392.57	100.00	-	-	-	152,970,392.57	2,578,074.39	-	-	152,970,392.57	2,578,074.39	-	Special loan
Straight test line advance payment	75,312,912.86	100.00	58,593,882.84	1,908,687.78	-	16,719,030.02	-	-	-	75,312,912.86	1,908,687.78	-	Owned fund
Test line section 1 project	66,488,788.68	100.00	-	-	-	66,488,788.68	-	-	-	66,488,788.68	-	-	Owned fund
Imported welding equipment	76,619,170.70	84.00	-	-	-	64,368,089.57	-	-	-	64,368,089.57	-	-	Owned fund
Carbody workshop 2 project	55,201,133.60	100.00	-	-	-	55,201,133.60	-	-	-	55,201,133.60	-	-	Owned fund
Circular test line advance payment	54,735,185.89	100.00	52,154,659.43	1,698,930.95	-	2,580,526.46	-	-	-	54,735,185.89	1,698,930.95	-	Owned fund
Factory area road project accounts	43,655,509.90	100.00	6,046,979.54	196,979.54	-	37,608,530.36	-	-	-	43,655,509.90	196,979.54	-	Owned fund
Dynamic pipeline trench project	42,105,225.00	100.00	34,512,920.12	1,124,253.69	-	7,592,304.88	-	-	-	42,105,225.00	1,124,253.69	-	Owned fund
Welding workshop project	41,459,795.00	96.00	-	-	-	39,918,951.63	681,664.98	-	-	39,918,951.63	681,664.98	-	Special loan
Welding workshop project	40,339,260.00	98.00	-	-	-	39,398,544.68	675,757.99	-	-	39,398,544.88	672,757.99	-	Special loan

Capitalization rate of capitalized amount used for this Group to determine borrowing expenses this year is 5.83%-5.94%.

## 17 Intangible assets

<u>This Group</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased This</u> <u>Year</u> RMB Yuan	<u>Amount Decreased This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the End</u> <u>of the Year</u> RMB Yuan
Cost or assessment value				
Land use right	819,786,305.58	31,119,718.58	-	850,906,024.16
Non-patent technology	180,000.00	20,000,000.00	-	20,180,000.00
Trademark right	14,175.00	-	-	14,175.00
Software	<u>112,817,484.26</u>	<u>14,622,031.92</u>	-	<u>127,439,516.18</u>
Total	<u>932,797,964.84</u>	<u>65,741,750.50</u>	-	<u>998,539,715.34</u>
Less: Accumulated amortization				
Land use right	22,884,783.25	18,240,403.46	-	41,125,186.71
Non-patent technology	143,166.70	7,015,500.17	-	7,158,666.87
Trademark right	11,231.78	517.52	-	11,749.30
Software	<u>42,549,421.55</u>	<u>19,021,531.86</u>	-	<u>61,570,953.41</u>
Total	<u>65,588,603.28</u>	<u>44,277,953.01</u>	-	<u>109,866,556.29</u>
Book value				
Land use right	796,901,522.33			809,780,837.45
Non-patent technology	36,833.30			13,021,333.13
Trademark right	2,2943.22			2,425.70
Software	<u>70,268,062.71</u>			<u>65,868,562.77</u>
Total	<u>867,209,361.56</u>			<u>888,673,159.05</u>

On Dec. 31, 2010, this Group has no capitalized amount for borrowing expenses in the book value of intangible assets.

In 2010, this Group has no intangible assets of uncertain service life.

On Dec. 31, 2010, this Group has no intangible assets used for mortgage and guarantee.

In 2010, total expenditure for research and development incurred to this Group is RMB 333,882,035.56 Yuan, where, amount included into the cost expenditure for the current year is RMB 332,194,813.72 Yuan, and amount included into the development expenditure is RMB 1,687,221.84 Yuan.



## 17 Intangible assets (continued)

<u>This Group</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased This</u> <u>Year</u> RMB Yuan	<u>Amount Decreased This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the End</u> <u>of the Year</u> RMB Yuan
Cost or assessment value				
Land use right	819,786,305.58	-	-	819,786,305.58
Non-patent technology	180,000.00	-	-	180,000.00
Trademark right	14,175.00	-	-	14,175.00
Software	<u>112,660,867.49</u>	<u>13,907,690.00</u>	-	<u>126,568,557.49</u>
Total	<u>932,641,348.07</u>	<u>13,907,690.00</u>	-	<u>946,549,038.07</u>
Less: Accumulated amortization				
Land use right	22,884,783.25	16,715,677.19	-	39,600,460.44
Non-patent technology	143,166.70	15,500.05	-	158,666.75
Trademark right	11,231.78	517.52	-	11,749.30
Software	<u>42,522,681.61</u>	<u>18,740,002.02</u>	-	<u>61,262,683.63</u>
Total	<u>65,561,863.34</u>	<u>35,471,696.78</u>	-	<u>101,033,560.12</u>
Book value				
Land use right	796,901,522.33			780,185,845.14
Non-patent technology	36,833.30			21,333.25
Trademark right	2,943.22			2,425.70
Software	<u>70,138,185.88</u>			<u>65,305,873.86</u>
Total	<u>867,079,484.73</u>			<u>845,515,477.95</u>

On Dec. 31, 2010, This Company has no capitalized amount for borrowing expenses in the book value of intangible assets.

In 2010, This Company has no intangible assets of uncertain service life.

On Dec. 31, 2010, This Company has no intangible assets used for mortgage and guarantee.

In 2010, total expenditure for research and development incurred to this Group is RMB 333,639,786.53 Yuan, where, amount included into the cost expenditure for the current year is RMB 332,194,813.72 Yuan, and amount included into the development expenditure is RMB 1,444,972.81 Yuan.

## 18 Deferred Income Tax Asset and Debt

### (1) Deferred income tax assets confirmed

<u>This Group</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	<u>Deductible temporary</u>	<u>Deferred income tax</u>	<u>Deductible temporary</u>	<u>Deferred income tax</u>
	<u>difference</u>	<u>assets</u>	<u>difference</u>	<u>assets</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Deferred income tax assets				
Bad Debts Provision	20,158,223.16	3,232,643.89	17,265,092.95	2,713,727.93
Inventory falling price provisions	18,749,125.28	2,812,368.79	-	-
Staff remuneration	14,095,919.52	2,114,387.93	14,095,919.52	2,114,387.92
Estimated liabilities	83,787,862.97	12,568,179.44	45,310,033.33	6,796,505.00
Profit and loss offset for internal sales not realized	6,488,389.99	1,509,413.72	2,317,602.00	578,655.88
Government subsidies	<u>15,000,000.00</u>	<u>2,252,000.00</u>	<u>42,150,000.00</u>	<u>6,322,500.00</u>
Total	<u>158,279,520.92</u>	<u>24,486,993.77</u>	<u>121,138,647.80</u>	<u>18,525,776.73</u>

<u>This Company</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	<u>Deductible temporary</u>	<u>Deferred income tax</u>	<u>Deductible temporary</u>	<u>Deferred income tax</u>
	<u>difference</u>	<u>assets</u>	<u>difference</u>	<u>assets</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Deferred income tax assets				
Bad Debts Provision	18,069,118.93	2,710,367.84	16,025,453.00	2,403,817.95
Inventory falling price provisions	18,749,125.28	2,812,368.79		
Staff remuneration	14,095,919.52	2,114,387.93	14,095,919.52	2,114,387.92
Estimated liabilities	83,787,862.97	12,568,179.44	45,310,033.33	6,796,505.00
Government subsidies	<u>15,000,000.00</u>	<u>2,250,000.00</u>	<u>42,150,000.00</u>	<u>6,322,500.00</u>
Total	<u>149,702,026.70</u>	<u>22,455,304.00</u>	<u>117,581,405.85</u>	<u>17,637,210.87</u>

On the date of balance sheet, net values of the deferred income tax assets and liabilities listed in the balance sheet:

	<u>This Group</u>		<u>This Company</u>	
	<u>2010</u>	<u>2009</u>	<u>2010</u>	<u>2009</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Deferred income tax assets	<u>24,486,993.77</u>	<u>18,525,776.73</u>	<u>22,455,304.00</u>	<u>17,637,210.87</u>
Total	<u>24,486,993.77</u>	<u>18,525,776.73</u>	<u>22,455,304.00</u>	<u>17,637,210.87</u>

### (2) Deferred income tax assets not confirmed

According to accounting policy as shown in Note 3(14), since the Casting Co. and Chongqing Co. can unlikely obtain the future taxable profits used for deduction of related losses, this Group has not yet determined the deferred income tax assets for the accumulated deductible losses of RMB 66,525,994.61 Yuan (in 2009: RMB 9,509,633.99 Yuan). According to current tax laws, in these deductible losses, RMB 28,631,540.25 Yuan will be due in 2014; and RMB 37,894,454.36 Yuan will be due in 2015.

19. Short-term Loan

<u>This group</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB	<u>Balance at beginning of year</u> RMB/ Equivalent RMB
Credit loan	81,841,042.07	64,507,886.52
Include: entrusted loan of related party		
Total	81,841,042.07	64,507,886.52
<u>This company</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB	<u>Balance at beginning of year</u> RMB/ Equivalent RMB
Credit loan	61,841,042.07	35,415,360.00
Include: entrusted loan of related party		
Total	61,841,042.07	35,415,360.00

On Dec. 31, 2010, this group and this company do not have short-term loan which is not paid back in time.

20. Bill Payable

<u>This Group and This Company</u>	<u>Balance at the end of year</u> RMB Yuan	<u>Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	470,760,472.04	107,640,512.72
Total	470,760,472.04	107,640,512.72

21 Account Payable

<u>This group</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	<u>Amount</u> RMB Yuan	<u>Percentage</u>	<u>Amount</u> RMB Yuan	<u>Percentage</u>
Within one year (include one year )	3,335,421,109.94	85.53%	2,906,915,234.46	95.35%
One to two year (include two years)	554,571,446.70	14.22%	130,530,841.74	4.28%
Two to three years (include three years)	7,978,126.77	0.20%	6,661,830.02	0.22%
Over three years	1,824,800.48	0.05%	4,422,994.05	0.15%



Total	3,899,795,483.89	100%	3,048,530,900.27	100%
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On Dec. 31, 2010, account payable of this Group with account age exceeding three years is RMB 1,824,800.48 Yuan, which is the unpaid account payable for materials.

## 21 Accounts payable (continued)

<u>This Company</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	Amount RMB Yuan	Percentage	Amount RMB Yuan	Percentage
Within 1 year (inclusive 1 year)	3,329,779,364.78	85.63%	2,910,605,026.56	95.57%
1-2 years (inclusive 2 years)	553,782,964.19	14.24%	126,284,587.98	4.15%
2-3 years (inclusive 3 years)	5,025,399.65	0.13%	5,203,973.47	0.17%
Above 3 years	-	-	3,308,463.50	0.11%
Total	<u>3,888,587,728.62</u>	<u>100%</u>	<u>3,045,402,051.51</u>	<u>100%</u>

## 22 Accounts collected in advance

<u>This Group</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	Amount RMB Yuan	Percentage	Amount RMB Yuan	Percentage
Within 1 year (inclusive 1 year)	6,931,776,664.64	84.42%	3,187,567,648.23	83.38%
1-2 years (inclusive 2 years)	1,213,708,962.42	14.78%	632,764,450.08	16.55%
2-3 years (inclusive 3 years)	65,556,391.88	0.80%	32,351.00	0.00%
Above 3 years	<u>32,351.00</u>	<u>0.00%</u>	<u>2,729,200.00</u>	<u>0.07%</u>
Total	<u>8,211,074,369.94</u>	<u>100%</u>	<u>3,823,093,649.31</u>	<u>100%</u>

On Dec. 31, 2010, account collected in advance of this Group with account age exceeding one year is RMB 1,278,189,340.86 Yuan, which is mainly the account collected in advance for construction of urban rail vehicle project. Since the construction period of this project is very long, the implementation of the contract has not been finished.

<u>This Company</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the Year</u>	
	Amount RMB Yuan	Percentage	Amount RMB Yuan	Percentage
Within 1 year (inclusive 1 year)	6,883,636,783.58	84.35%	3,185,920,425.13	83.37%
1-2 years (inclusive 2 years)	1,212,088,962.42	14.85%	632,764,450.08	16.56%
2-3 years (inclusive 3 years)	65,556,391.88	0.80%	32,351.00	0.00%
Above 3 years	<u>32,351.00</u>	<u>0.00%</u>	<u>2,729,200.00</u>	<u>0.07%</u>
Total	<u>8,161,314,488.88</u>	<u>100%</u>	<u>3,821,446,426.21</u>	<u>100%</u>

## 23 Staff remuneration payable

<u>This Group</u>	<u>Book Balance at the</u> <u>Beginning of the</u> <u>Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Amount Paid This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Wages, bonuses, allowances and subsidies	-	764,690,731.70	759,627,190.17	5,063,541.53
Employee welfare expenses	-	51,028,227.36	51,028,227.36	-
Social insurance charges	70,593,851.64	129,507,895.41	174,353,129.64	25,748,617.41
Insurance premium for basic medical treatment	62,913,073.42	35,312,726.74	72,734,394.89	25,491,405.27
Basic old-age insurance premium	7,945,951.88	83,685,114.76	91,067,115.52	563,951.12
Unemployment insurance expenses	27,240.00	6,354,369.77	6,332,721.92	48,887.85
Industrial injury insurance expenses	(292,413.66)	4,121,748.33	4,201,519.76	(372,185.09)
Birth insurance expenses	-	33,935.81	17,377.55	16,558.26
Housing fund	68,100.00	53,591,627.61	53,531,774.60	127,953.01
Trade union funds and employee education funds	-	34,418,256.23	29,058,954.44	5,359,301.79
Housing subsidies	137,118,268.03	-	-	137,118,268.03
Non-monetary benefits	-	-	-	-
Early retirement benefits (i)				
- some payables within one year	22,787,000.00	19,464,035.88	21,631,035.88	20,620,000.00
Additional retirement benefits (i)				
- some payables within one year	7,150,000.00	7,808,158.46	7,937,158.46	7,021,000.00
Compensations for breaking labor relations	-	-	-	-
Others	-	40,763,336.86	40,763,336.86	-
Total	<u>237,717,219.67</u>	<u>1,101,272,269.51</u>	<u>1,137,930,807.41</u>	<u>201,058,681.77</u>

### (i) Early retirement benefits and additional retirement benefits

	<u>Book Balance at the End of</u> <u>the Year</u> RMB Yuan	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan
Early retirement benefits	88,817,000.00	108,253,123.84
Additional retirement benefits	<u>62,399,357.31</u>	<u>65,985,427.81</u>
Less: some payables within one year:		
- Early retirement benefits	20,620,000.00	22,787,000.00
- Additional retirement benefits	<u>7,021,000.00</u>	<u>7,150,000.00</u>
Staff remuneration payable (non-current liabilities)	<u>123,575,357.31</u>	<u>144,301,551.65</u>



## 23 Staff remuneration payable (continued)

## (i) Early retirement benefits and additional retirement benefits (continued)

<u>This Company</u>	<u>Book Balance at the</u> <u>Beginning of the</u> <u>Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Amount Paid This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Wages, bonuses, allowances and subsidies	-	753,453,519.06	748,953,519.06	4,500,000.00
Employee welfare expenses	-	49,712,353.13	49,712,353.13	-
Social insurance charges	70,158,011.64	127,812,838.61	173,034,566.94	24,936,283.31
Insurance premium for basic medical treatment	62,776,873.42	34,914,920.06	72,361,955.24	25,329,838.24
Basic old-age insurance premium	7,673,551.88	82,559,737.02	90,233,288.90	-
Annuity payment	-	6,265,111.04	6,265,111.04	-
Unemployment insurance expenses	-	4,073,070.49	4,174,211.76	-393,554.93
Industrial injury insurance expenses	-292,413.66	-	-	-
Birth insurance expenses	-	53,195,182.00	53,195,182.00	-
Housing fund	-	33,883,889.37	28,715,120.02	5,168,769.35
Trade union funds and employee education funds	-	-	-	137,118,268.03
Housing subsidies	137,118,268.03	-	-	137,118,268.03
Non-monetary benefits	-	-	-	-
Early retirement benefits (ii)	-	-	-	-
- some payables within one year:	22,787,000.00	19,464,035.88	21,631,035.88	20,620,000.00
Additional retirement benefits (ii)	-	-	-	-
- some payables within one year:	7,150,000.00	7,808,158.46	7,937,158.46	7,021,000.00
Compensations for breaking labor relations	-	40,362,010.35	40,362,010.35	-
Others	-	-	-	-
Total	<u>237,213,279.67</u>	<u>1,085,691,986.86</u>	<u>1,123,540,945.84</u>	<u>199,364,320.69</u>

## (ii) Early retirement benefits and additional retirement benefits

	<u>Book Balance at the End of</u> <u>the Year</u> RMB Yuan	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan
Early retirement benefits	88,817,000.00	108,253,123.84
Additional retirement benefits	<u>62,399,357.31</u>	<u>65,985,427.81</u>
Less: some payables within one year:		
- Early retirement benefits	20,620,000.00	22,787,000.00
- Additional retirement benefits	<u>7,021,000.00</u>	<u>7,150,000.00</u>
Staff remuneration payable (non-current liabilities)	<u>123,575,357.31</u>	<u>144,301,551.65</u>

## 23 Staff remuneration payable (continued)

### (iii) Early retirement benefits and additional retirement benefits (continued)

The above liabilities of this Group and This Company are evaluated by the Independent Actuary Mercer Consultants (Shanghai) Co., Ltd. with method of expected cost per unit. Main actuary assumptions used for evaluation of the above liabilities on the balance sheet date are analyzed as shown below:

<u>This Group</u>	<u>2010</u>	<u>2009</u>
Discount rate		
- Early retirement benefits	3.40%	2.50%
- Additional retirement benefits	3.80%-4.10%	3.40-4.00%
Annual growth rate of living allowances	9.50%	9.50%
Annual salary growth rate during early retirement period	8.00%	8.00%
Annual growth rate of medical expenses	7.00%-11.00%	7.00-12.00%

Estimated average life in the future refers to 2005' China Life Insurance Experience Life Table (2000-2003);

## 24 Dividends payable

On Dec. 31, 2010, dividends payable mainly refers to the dividends that should be paid by this Group and This Company to Jilin Province Golden Bean Industry Group Co., Ltd.

## 25 Other payables

<u>This Group</u>	<u>Book Balance at the End of the</u>		<u>Book Balance at the Beginning of</u>	
	<u>Year</u>		<u>the Year</u>	
	<u>Amount</u>	<u>Percentage</u>	<u>Amount</u>	<u>Percentage</u>
	RMB Yuan		RMB Yuan	
Within 1 year (inclusive 1 year)	306,903,313.86	93.63%	131,275,844.99	84.01%
1-2 years (inclusive 2 years)	1,873,475.72	0.57%	20,938,027.82	13.40%
2-3 years (inclusive 3 years)	15,023,885.48	4.58%	354,846.63	0.23%
Above 3 years	<u>3,992,429.43</u>	<u>1.22%</u>	<u>3,701,069.98</u>	<u>2.37%</u>
Total	<u>327,793,104.49</u>	<u>100%</u>	<u>156,269,789.42</u>	<u>100%</u>

25 Other payables

<u>This Company</u>	<u>Book Balance at the End of the Year</u>		<u>Book Balance at the Beginning of the</u>	
	<u>Year</u>		<u>Year</u>	
	<u>Amount</u> RMB Yuan	<u>Percentage</u>	<u>Amount</u> RMB Yuan	<u>Percentage</u>
Within 1 year (inclusive 1 year)	249,472,355.24	92.29%	89,105,557.73	78.06%
1-2 years (inclusive 2 years)	1,731,387.05	0.64%	21,042,499.28	18.44%
2-3 years (inclusive 3 years)	15,125,212.79	5.60%	354,846.63	0.31%
Above 3 years	<u>3,992,429.43</u>	<u>1.48%</u>	<u>3,641,069.98</u>	<u>3.19%</u>
Total	<u>270,321,384.51</u>	<u>100%</u>	<u>114,143,973.62</u>	<u>100%</u>

26 Non-current liabilities due within one year

<u>This Group</u>	<u>Book Balance at the End of the</u> <u>Year</u> RMB Yuan	<u>Book Balance at the Beginning of</u> <u>the Year</u> RMB Yuan
Long-term loan due within one year	72,000,000.00	-
Where, credit borrowing	72,000,000.00	-
Where, related parties entrusted loans	72,000,000.00	-
Long-term payables due within one year	<u>10,720,853.86</u>	<u>-</u>
Total	<u>82,720,853.86</u>	<u>-</u>

<u>This Company</u>	<u>Book Balance at the End of the</u> <u>Year</u> RMB Yuan	<u>Book Balance at the Beginning of</u> <u>the Year</u> RMB Yuan
Long-term loan due within one year	72,000,000.00	-
Where, credit borrowing	72,000,000.00	-
Where, related parties entrusted loans	72,000,000.00	-
Long-term payables due within one year	<u>10,720,853.86</u>	<u>-</u>
Total	<u>82,720,853.86</u>	<u>-</u>



## 27 Estimated liabilities

<u>This Group</u>	<u>Book Balance at the Beginning of the Year</u>	<u>Amount Increased This Year</u>	<u>Amount Decreased This Year</u>	<u>Book Balance at the End of the Year</u>
Product quality assurance (i)	45,310,033.33	109,505,240.05	81,259,571.00	73,555,702.38
Onerous contract	-	12,190,192.59	-	12,190,192.59
Accounts receivable creditor's rights transfer	-	10,458,082.08	-	10,458,082.08
Total	<u>45,310,033.33</u>	<u>132,153,514.72</u>	<u>81,259,571.00</u>	<u>96,203,977.05</u>
<u>This Company</u>	<u>Book Balance at the Beginning of the Year</u>	<u>Amount Increased This Year</u>	<u>Amount Decreased This Year</u>	<u>Book Balance at the End of the Year</u>
Product quality assurance (i)	45,310,033.33	109,279,318.56	81,259,571.00	73,329,780.89
Onerous contract	-	12,190,192.59	-	12,190,192.59
Accounts receivable creditor's rights transfer	-	10,458,082.08	-	10,458,082.08
Total	<u>45,310,033.33</u>	<u>131,927,593.23</u>	<u>81,259,571.00</u>	<u>95,978,055.56</u>

(i) This Group and This Company make commitments to provide after-sale service and repair for locomotives, vehicles and parts/components sold, repaired and transformed, and be responsible for repair and replacements of any defective products within the warranty period. The estimated liabilities for the above product quality assurance are drawn based on the actual conditions of previous repair and return of goods, and estimated product quality assurance expenses to be undertaken.

## 28 Long-term loan

<u>This Group</u>	<u>Book Balance at the End of the Year</u>	<u>Book Balance at the Beginning of the Year</u>
	<u>RMB Yuan</u>	<u>RMB Yuan</u>
Credit borrowing	863,000,000.00	125,000,000.00
Where, related parties entrusted loans	<u>863,000,000.00</u>	<u>125,000,000.00</u>
Total	<u>863,000,000.00</u>	<u>125,000,000.00</u>
<u>This Company</u>	<u>Book Balance at the End of the Year</u>	<u>Book Balance at the Beginning of the Year</u>
	<u>RMB Yuan</u>	<u>RMB Yuan</u>
Credit borrowing	863,000,000.00	-
Where, related parties entrusted loans	<u>863,000,000.00</u>	<u>-</u>
Total	<u>863,000,000.00</u>	<u>-</u>

On Dec. 31, 2010, this Group and This Company have no outstanding long-term loan due.

29 Long-term Account Payable

<u>The Group and The Company</u>	<u>Year-end Book Balance</u> RMB yuan	<u>Year-beginning Book Balance</u> RMB yuan
Actuarial costs for three kinds of persons	123,575,357.31	144,301,551.65
Financial lease	49,753,612.21	-
Total	173,328,969.52	144,301,551.65

30 Other Non-current Liability

	<u>The Group</u>		<u>The Company</u>	
	<u>Year-end Book Balance</u> RMB yuan	<u>Year-beginning Book Balance</u> RMB yuan	<u>Year-end Book Balance</u> RMB yuan	<u>Year-beginning Book Balance</u> RMB yuan
Deferred income (i)	144,797,521.54	168,301,000.00	132,857,521.54	82,901,000.00
Total	144,797,521.54	168,301,000.00	132,857,521.54	82,901,000.00

(i) Deferred Income

<u>This Group</u>	<u>Year-beginning Book Balance</u> RMB yuan	<u>This Year's Reductive Amount</u> RMB yuan	<u>This Year's Increased Amount</u> RMB yuan	<u>Year-end Book Balance</u> RMB yuan
Earmark	168,301,000.00	43,937,900.00	72,240,900.00	139,998,000
Discount funds	-	4,799,521.54	-	4,799,521.54
Other	-	5,250,000.00	5,250,000.00	-
Total	168,301,000.00	53,987,421.54	77,490,900.00	144,797,521.54

Registered capital structure of this Group and this Company on Dec. 31 is given below:

The Group and The Company	Year-beginning Balance		This Year's Increased Amount	This Year's Reductive Amount	Year-end Balance	
	Investment Amount RMB yuan	Percentage			Investment Amount RMB yuan	Percentage
China CNR Corporation Limited	390,602,307.00	35.20%	1,145,076,944.00	-	1,535,679,251.00	73.85%
Changchun Railway Vehicles Facilities Co., Ltd	404,310,656.00	36.42%	-	-	404,310,656.00	19.44%
<b>CNR Changchun Railway Vehicles Group Co., Ltd.</b>	175,689,344.00	15.83%	-	175,689,344.00	-	-
Jilin Province Golden Bean Industry Group Co., Ltd	107,478,046.00	9.68%	-	-	107,478,046.00	5.17%
KTK Group Co., Ltd	19,679,674.00	1.77%	-	-	19,679,674.00	0.95%
Jiangsu Joint Investment Co., Ltd	10,600,000.00	0.95%	-	-	10,600,000.00	0.51%
China Railway Science & Technolog Development Corporation	1,311,978.00	0.12%	-	-	1,311,978.00	0.06%
Dunhua Forestry Co., Ltd of Jilin Yanbian Forestry Group	327,995.00	0.03%	-	-	327,995.00	0.02%
<b>Total</b>	<b>1,110,000,000.00</b>	<b>100.00%</b>	<b>1,145,076,944.00</b>	<b>175,689,344.00</b>	<b>2,079,387,600.00</b>	<b>100.00%</b>

The paid-up capital structure of our company on Dec. 31 is as follows:

The Group and The Company	2010		2009	
	Amount RMB yuan	Percentage	Amount RMB yuan	Percentage
China CNR Corporation Limited	1,535,679,251.00	73.85%	1,128,268,521.00	67.48%
Changchun Railway Vehicles Facilities Co., Ltd	404,310,656.00	19.44%	404,310,656.00	24.18%
Jilin Province Golden Bean Industry Group Co., Ltd	107,478,046.00	5.17%	107,478,046.00	6.43%
KTK Group Co., Ltd	19,679,674.00	0.95%	19,679,674.00	1.18%
Jiangsu Joint Investment Co., Ltd	10,600,000.00	0.51%	10,600,000.00	0.63%
China Railway Science & Technolog Development Corporation	1,311,978.00	0.06%	1,311,978.00	0.08%
Dunhua Forestry Co., Ltd of Jilin Yanbian Forestry Group	327,995.00	0.02%	327,995.00	0.02%
	<b>2,079,387,600.00</b>	<b>100.00%</b>	<b>1,671,976,870.00</b>	<b>100.00%</b>



### 31 Paid-up capital (continued)

Paid-up capital structure of this Company by Dec. 31 is as given below:

	<u>2010</u>		<u>2009</u>	
	<u>Amount</u>	<u>Percentage</u>	<u>Amount</u>	<u>Percentage</u>
	RMB Yuan		RMB Yuan	
China CNR Corporation Ltd.	1,535,679,251.00	73.85%	390,602,307.00	35.20%
Changchun Railway Vehicles Facilities Co., Ltd.	404,310,656.00	19.44%	404,310,656.00	36.42%
CNR Changchun Railway Vehicles Group Co., Ltd.	-	-	175,689,344.00	15.83%
Jilin Province Golden Bean Industry Group Co., Ltd.	107,478,046.00	5.17%	107,478,046.00	9.68%
KTK Group Co., Ltd.	19,679,674.00	0.95%	19,679,674.00	1.77%
Jiangsu Joint Investment Co., Ltd.	10,600,000.00	0.51%	10,600,000.00	0.95%
China Railway Science & Technology Development Corporation	1,311,978.00	0.06%	1,311,978.00	0.12%
Dunhua Forestry Co., Ltd. of Jilin Yanbian Forestry Group	<u>327,955.00</u>	<u>0.02%</u>	<u>327,995.00</u>	<u>0.03%</u>
	<u>2,079,387,600.00</u>	<u>100.00%</u>	<u>1,110,000,000.00</u>	<u>100.00%</u>

In this year, China CNR Corporation Ltd. increases capital to this Company, for which, CZFYZ [2010] No. 155 Capital Verification Report has been issued by Changchun Zhongfan Certified Public Accountants Co., Ltd.

### 32 Capital Reserve

<u>This Group</u>	<u>Year-beginning Balance</u>	<u>This Year's Reductive Amount</u>	<u>This Year's Increased Amount</u>	<u>Year-end Balance</u>	Reasons and Basis for Changes Owner's input
	RMB yuan	RMB yuan	RMB yuan	RMB yuan	
Capital premium	1,757,378,439.43	646,011,890.12	-	2,403,390,329.55	#
Other capital reserve	86,338,752.25	-	-	86,338,752.25	
-Other					
Total	<u>1,843,717,191.68</u>	<u>646,011,890.12</u>	<u>-</u>	<u>2,489,729,081.80</u>	

### 33 Surplus Reserve

<u>The Group and The Company</u>	<u>Year-beginning Balance</u>	<u>This Year's Reductive Amount</u>	<u>This Year's Increased Amount</u>	<u>Year-end Balance</u>	Reasons and Basis for Changes Profits are distributed according to the Articles of Association
	RMB yuan	RMB yuan	RMB yuan	RMB yuan	
Legal surplus reserve fund	26,773,407.14	56,011,182.19	-	82,784,589.33	
Total	<u>26,773,407.14</u>	<u>56,011,182.19</u>	<u>-</u>	<u>82,784,589.33</u>	

### 34 Undistributed Profit

	<u>This Group</u>	<u>This Company</u>
	RMB yuan	RMB yuan
This year's year-beginning balance	184,980,274.36	203,448,418.63
This year's increased amount	519,788,196.89	560,111,821.91
Among which: this year's net profit transferring-in	519,788,196.89	560,111,821.91
This year's reductive amount	115,947,586.61	127,218,128.71
Among which: this year's withdrawn surplus reserve amount	56,011,182.19	56,011,182.19
This year's distributed cash dividends amount	59,936,404.42	71,206,946.52
This year's year-end balance	588,820,884.64	636,342,111.83
Among which: appropriation of profits approved by the board of directors		

1,433,697.01

According to the regulation of articles of association, this company withdraws legal surplus reserve by 10% of the rest left after using the company's net profit of this year to make up previous annual losses.

On Sep. 14, 2010, this Company made a resolution and approved the cash dividend distribution plan for 2009 on the shareholders conference according to the Articles of Association. The resolution decided to make distribution according to the shareholding proportions of the share holders on Dec. 31, 2009, and total amount to be distributed is RMB 59,936,404.42 Yuan.

Surplus reserve withdrawn by subsidiary in this year which belongs to the parent company is RMB 72,265.04 yuan (the year of 2009 : RMB 939,436.19 yuan).

By Dec. 31, 2010 , this group's undistributed profit which belongs to the parent company includes the surplus reserve RMB 1,505,962.05 yuan (the year of 2009 : RMB 1,433,697.01 yuan) withdrawn by this company's subsidiary.

### 35 Business Incomes

<u>This Group</u>	<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
	<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
	RMB yuan	RMB yuan	RMB yuan	RMB yuan
Main business subtotal				
- New creation	9,077,921,033.22	7,785,621,218.32	4,773,794,227.67	4,272,523,871.74
- Maintenance and remolding	461,625,541.67	333,616,768.06	-	-
- Parts	1,013,197,381.41	597,849,509.90	866,711,503.31	571,847,345.73
Other business subtotals	215,836,754.65	156,994,521.51	126,789,630.84	74,034,374.29
Total	10,768,580,710.95	8,874,082,017.79	5,767,295,361.82	4,918,405,591.76

Other business incomes are mainly the income from material sales, income from dynamic energy sales, income from technical transfer, and income from technical consultation and agency.

<u>This Company</u>	<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
	<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
	RMB yuan	RMB yuan	RMB yuan	RMB yuan
Main business subtotal				
- New creation	9,077,921,033.22	7,785,666,722.49	4,773,794,227.67	4,272,523,871.74
- Maintenance and remolding	457,844,669.61	330,462,136.31	-	-
- Parts	962,199,323.30	584,922,802.81	792,393,714.37	544,133,922.98
Other business subtotals	209,292,061.15	155,387,362.11	142,147,366.68	72,209,160.09
Total	10,707,257,087.28	8,856,439,023.72	5,708,335,308.72	4,888,866,954.81

Other business incomes are mainly the income from material sales, income from dynamic energy sales, income from technical transfer, and income from technical consultation and agency.

### 36 Financial Expenses

<u>This Group</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB yuan	RMB yuan
Interest expense	94,681,421.13	34,244,283.30
	5,652,000.00	4,490,000.00
Unacknowledged financing charges amortization (i)	23,275,360.73	14,816,002.31
Minus: capitalized interest expense (ii)	77,058,060.40	23,918,280.99
Net interest expense	(5,619,896.90)	(6,220,511.97)
Interest income of savings	106,586,496.07	(42,982,913.97)
Net foreign exchange loss	21,163,516.30	17,998,126.02
Other financing charges	199,188,175.87	(7,287,018.93)
Total		

(i) Financing cost unconfirmed to be amortized as actuarial supplementary retirement benefits and financing cost unconfirmed to the early retirement benefit are within the current term amortization amount.

(ii) Capitalization rate for capitalization of normal borrowing interest of this year is 5.83%-5.94%.



<u>This Company</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB yuan	RMB yuan
Interest expense	61,001,988.38	29,677,110.65
Unacknowledged financing charges amortization (i)	5,652,000.00	4,490,000.00
Minus: capitalized interest expense (ii)	1,284,884.03	14,816,002.31
Net interest expense	65,369,104.35	19,351,108.34
Interest income of savings	(4,146,472.28)	(6,077,973.35)
Net foreign exchange loss	105,610,693.19	(43,047,802.63)
Other financing charges	20,646,151.93	16,847,590.11
Total	187,479,477.19	(12,927,077.53)

(i) Financing cost unconfirmed to be amortized as actuarial supplementary retirement benefits and financing cost unconfirmed to the early retirement benefit are within the current term amortization amount.

(ii) Capitalization rate for capitalization of normal borrowing interest of this year is 5.83%.

37 Loss from Asset Devaluation

<u>This group</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB Yuan	RMB Yuan
Accounts receivable bad debts losses	2,893,130.21	(5,470,328.76)
Loss on inventory valuation	<u>16,217,548.37</u>	<u>-</u>
Total	<u>19,110,678.58</u>	<u>(5,470,328.76)</u>
 <u>This Company</u>	 <u>This Year's Amount Incurred</u>	 <u>Last Year's Amount Incurred</u>
	RMB Yuan	RMB Yuan
Accounts receivable bad debts losses	2,043,665.93	(6,487,633.49)
Loss on inventory valuation	<u>11,383,485.11</u>	<u>-</u>
Total	<u>13,427,151.04</u>	<u>(6,487,633.49)</u>

38 Income from investment

<u>This group</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan
Long-term equity investment	12,756,299.89	84,611,614.53
Where, investment income calculated and confirmed by equity law	12,756,299.89	84,611,614.53
Other investment losses	(4,317,911.88)	-
Total	<u>8,438,388.01</u>	<u>84,611,614.53</u>

<u>This Company</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan
Long-term equity investment	12,756,299.89	84,611,614.53
Where, investment income calculated and confirmed by equity law	12,756,299.89	84,611,614.53
Other investment losses	(4,317,911.88)	-
Total	<u>8,438,388.01</u>	<u>84,611,614.53</u>



39 Non-business income

<u>This group</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB Yuan	RMB Yuan
Gains from disposal of non-current assets	1,923,718.29	3,121,411.58
Where, gains from disposal of fixed assets	1,923,718.29	3,121,411.58
Gains from government subsidies (i)	77,490,900.00	114,683,060.75
Default compensation income	9,636,230.35	1,577,885.54
Other gains	<u>527,632.19</u>	<u>-</u>
Total	<u>89,578,480.83</u>	<u>119,382,357.87</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB Yuan	RMB Yuan
Gains from disposal of non-current assets	1,923,718.29	1,487,310.92
Where, gains from disposal of fixed assets	1,923,718.29	1,487,310.92
Gains from government subsidies (i)	77,534,400.00	113,953,060.75
Default compensation income	<u>9,631,635.96</u>	<u>1,360,935.99</u>
Total	<u>86,089,754.25</u>	<u>116,801,307.66</u>

39Non-operating income (continued)

(i) Government subsidies

This group

<u>Item</u>	<u>Amount</u>		<u>Source and Basis</u>	<u>Related Documents</u>	<u>Approval</u>	<u>Approval Authority</u>	<u>Document Validity</u>
	This Year's Amount RMB Yuan	Last Year's Amount RMB Yuan					
Research grants		-	4,850,000.00	General Office of Ministry of Science and Technology	GKFC [2009] No. 430	General Office of Ministry of Science and Technology	2009
		-	730,000.00	Ministry of Science and Technology	Technical service contract	Ministry of Science and Technology	2007-2009
Special appropriation	5,000,000.00	5,000,000.00	Department of Science and Technology of Jilin Province	Major scientific & technological achievements transformation project of Jilin Province		Department of Science and Technology of Jilin Province	2009-2012
	100,000.00	20,000.00	Ministry of Housing and Urban-Rural Development	Engineering construction standard quota preparation project		Ministry of Housing and Urban-Rural Development	2009-2010
	1,000.00	24,000.00	Department of Finance of Jilin Province	JCQZ [2009] No. 758		Department of Finance of Jilin Province	2009
	4,000,000.00	4,000,000.00	Ministry of Science and Technology	GKFC [2009] No. 497		Ministry of Science and Technology	2009
	36,000,000.00	-	Development and Reform Commission, Ministry of Science and Technology	GKFC [2010] No. 169, etc.		General Office of Ministry of Science and Technology	2008-2010
	1,000,000.00	-	Finance Bureau of Jilin Province	CHL [2010] No. 10		Finance Bureau of Jilin Province	2010
	1,980,000.00	-	Ministry of Finance	GKFJ [2010] No. 312, etc.		Ministry of Finance	2010
	17,942,000.00	-	General Office of Ministry of Science and Technology	GKFC [2010] No. 169		General Office of Ministry of Science and Technology	2010
	820,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942		Department of Finance of Jilin Province	2010
	3,000,000.00	-	Department of Finance of	JCQZ [2009] No. 1718		Department of Finance of	2010

	441,400.00	-	Jilin Province Department of Finance of Jilin Province	JCQZ [2010] No. 336	Jilin Province Department of Finance of Jilin Province	2010
	30,000.00	-	Science & Technology Commission of Jiangbei District, Chongqing City	JBQKW [2007] No. 47	Science & Technology Commission of Jiangbei District, Chongqing City	2007
	2,910,000.00	-	Finance Bureau of Jiangbei District, Chongqing City	JBCF [2010] No. 428	Finance Bureau of Jiangbei District, Chongqing City	2010
	-	153,014.77	Finance Bureau of Changchun City	CCJZ [2005] No. 292	Finance Bureau of Changchun City	2005
	-	40,000.00	Department of Science and Technology of Jilin Province	Notice of Jilin Province Potent Development Funds	Department of Science and Technology of Jilin Province	2009
	-	94,500,000.00	General Office of Ministry of Finance	CQ [2009] No. 335	General Office of Ministry of Finance	2009
	16,500.00	-	Finance Bureau of Changchun City	CCQZ [2010] No. 1800	Finance Bureau of Changchun City	2010
Finance discount	-	1,849,371.58	Ministry of Finance	-	Ministry of Finance	2008
	-	1,516,674.40	Ministry of Finance	CQ [2009] No. 421	Ministry of Finance	2009
Miscellaneous	550,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942	Department of Finance of Jilin Province	2010
	3,700,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942	Department of Finance of Jilin Province	2010
	-	2,000,000.00	Environmental Protection Bureau of Changchun City	CHL [2009] No. 12	Environmental Protection Bureau of Changchun City	2009
Total	<u>77,490,900.00</u>	<u>114,683,060.75</u>				



39 Non-operating income (continued)

(i) Government subsidies

This Company

Item	<u>Amount</u>		<u>Source and Basis</u>	<u>Related Approval Documents</u>	<u>Approval Authority</u>	<u>Document Validity</u>
	This Year's Amount RMB Yuan	Last Year's Amount RMB Yuan				
Research grants	-	4,850,000.00	General Office of Ministry of Science and Technology	GKFC [2009] No. 430	General Office of Ministry of Science and Technology	2009
Special appropriation	5,000,000.00	5,000,000.00	Department of Science and Technology of Jilin Province	Major scientific & technological achievements transformation project of Jilin Province	Department of Science and Technology of Jilin Province	2009-2012
	100,000.00	20,000.00	Ministry of Housing and Urban-Rural Development	Engineering construction standard quota preparation project	Ministry of Housing and Urban-Rural Development	2009-2010
	1,000.00	24,000.00	Department of Finance of Jilin Province	JCQZ [2009] No. 758	Department of Finance of Jilin Province	2009
	4,000,000.00	4,000,000.00	Ministry of Science and Technology	GKFC [2009] No. 497	Ministry of Science and Technology	2009
	36,000,000.00	-	Development and Reform Commission, Ministry of Science and Technology	GKFC [2010] No. 169, etc.	General Office of Ministry of Science and Technology	2008-2010
	1,000,000.00	-	Finance Bureau of Jilin Province	CHL [2010] No. 10	Finance Bureau of Jilin Province	2010
	1,980,000.00	-	Ministry of Finance	GKFJ [2010] No. 312, etc.	Ministry of Finance	2010
	17,942,000.00	-	General Office of Ministry of Science and Technology	GKFC [2010] No. 169	General Office of Ministry of Science and Technology	2010
	820,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942	Department of Finance of Jilin Province	2010
	3,000,000.00	-	Department of Finance of Jilin Province	JCQZ [2009] No. 1718	Department of Finance of Jilin Province	2010

	441,400.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 336	Department of Finance of Jilin Province	2010
	-	153,014.77	Finance Bureau of Changchun City	CCJZ [2005] No. 292	Finance Bureau of Changchun City	2005
	-	40,000.00	Department of Science and Technology of Jilin Province	Notice of Jilin Province Potent Development Funds	Department of Science and Technology of Jilin Province	2009
	-	94,500,000.00	General Office of Ministry of Finance	CQ [2009] No. 335	General Office of Ministry of Finance	2009
	-	1,849,371.58	Ministry of Finance	-	Ministry of Finance	2008
	-	1,516,674.40	Ministry of Finance	CQ [2009] No. 421	Ministry of Finance	2009
Miscellaneous	550,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942	Department of Finance of Jilin Province	2010
	3,700,000.00	-	Department of Finance of Jilin Province	JCQZ [2010] No. 1942	Department of Finance of Jilin Province	2010
	-		Environmental Protection Bureau of Changchun City	CHL [2009] No. 12	CHL [2009] No. 12 Environmental Protection Bureau of Changchun City	2009
		<u>2,000,000.00</u>				
Total	<u>74,534,400.00</u>	<u>113,953,060.75</u>				

#### 40 Non-business Expenditure

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Losses from disposal of non-current assets	479,534.16	1,154,422.15
Where, losses from disposal of fixed assets	479,534.16	1,154,422.15
Donation outlay	2,260,000.00	4,850,000.00
Penalty expenses	15,288.39	121,568.00
Other expenses	<u>22,922,293.62</u>	<u>7,177,735.28</u>
Total	<u>25,677,116.17</u>	<u>13,303,725.43</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Losses from disposal of non-current assets	477,204.66	1,153,529.65
Where, losses from disposal of fixed assets	477,204.66	1,153,529.65
Donation outlay	2,260,000.00	4,850,000.00
Penalty expenses	7,917.00	50,000.00
Other expenses	<u>22,612,282.65</u>	<u>6,863,055.97</u>
Total	<u>25,357,404.31</u>	<u>12,916,585.62</u>

#### 41 Income Tax Expense

##### (1) Composition of Income Tax Expense

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
This year's income taxes	62,735,484.23	33,797,916.74
Deferred income taxes	<u>(5,961,217.04)</u>	<u>(597,729.02)</u>
Total	<u>56,774,267.19</u>	<u>33,200,187.72</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
This year's income taxes	56,304,322.33	26,200,936.80
Deferred income taxes	<u>(4,818,093.13)</u>	<u>235,253.04</u>
Total	<u>51,486,229.20</u>	<u>26,436,189.84</u>



## 41 Income Tax Expense (Continued)

(2) The relationship between income tax expense and accounting profit is as follows:

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Profit before tax	<u>559,831,659.26</u>	<u>365,048,309.01</u>
Statutory tax rate	15%	15%
Expected income taxes calculated as per statutory tax rate	<u>83,974,748.89</u>	<u>54,757,246.35</u>
Influence due to subsidiary's application of different tax rates	6,898,035.97	5,457,540.17
Non-deductible interest expenses		
Non-deductible entertainment expenses	1,413,804.67	797,941.06
Percentage of non-payable tax/non-deductible expenses in profits/losses of the cooperation company	(1,913,444.98)	(12,691,742.18)
Research and development expenses with extra deduction being permitted by tax laws	(24,914,611.03)	(10,267,958.68)
Purchasing domestic equipment tax credit	(365,233.34)	(3,456,435.43)
Miscellaneous	<u>(8,319,032.99)</u>	<u>(1,396,403.57)</u>
This year's income tax expenses	<u>56,774,267.19</u>	<u>33,200,187.72</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB Yuan	<u>Last Year's Amount Incurred</u> RMB Yuan
Profit before tax	<u>611,598,051.11</u>	<u>378,175,532.66</u>
Statutory tax rate	15%	15%
Expected income taxes calculated as per statutory tax rate	<u>91,739,707.67</u>	<u>56,726,329.90</u>
Non-deductible interest expenses		
Non-deductible entertainment expenses	945,648.96	683,963.48
Percentage of non-payable tax/non-deductible expenses in profits/losses of the cooperation company	(1,913,444.98)	(12,691,742.18)
Research and development expenses with extra deduction being permitted by tax laws	(24,914,611.03)	(10,267,958.68)
Purchasing domestic equipment tax credit	(365,233.34)	(3,456,435.43)
Miscellaneous	<u>(14,005,838.08)</u>	<u>(4,557,967.25)</u>
This year's income tax expenses	<u>51,486,229.20</u>	<u>26,436,189.84</u>

## 42 Statement of Cash Flow Supplementary Material

(1) Net profit is regulated into cash flow for business activities:

<u>This Group</u>	<u>This Year' s Amount Incurred</u> RMB Yuan	<u>Last Year' s Amount Incurred</u> RMB Yuan
Net profit	503,057,392.07	331,848,121.29
Add: Preparation for impairment of assets	19,110,678.58	(5,470,328.76)
Depreciation of fixed assets and investment real estate	236,572,056.97	166,092,296.17
Amortization of intangible assets	37,702,575.13	28,291,973.22
Amortization of long-term deferred expenses	45,500.00	3,500.00
Net income from disposal of fixed assets, investment real estate, intangible assets and other long-term assets	(1,444,184.13)	(1,967,881.93)
Loss on retirement of fixed assets	-	892.50
Financial expenses	129,867,631.53	27,269,919.22
Income from investment	(12,756,299.89)	(84,611,614.53)
Deferred tax assets increased	(5,961,217.04)	(597,729.02)
Inventory increased	(6,058,532,193.05)	(1,579,397,264.92)
Operating receivables increased	(462,340,459.01)	(558,284,101.17)
Operating payables increased	<u>5,567,413,688.05</u>	<u>3,563,031,513.49</u>
Net cash flow amount generated from operating activities	<u>(47,264,830.79)</u>	<u>1,886,209,295.56</u>

<u>This Company</u>	<u>This Year' s Amount Incurred</u> RMB Yuan	<u>Last Year' s Amount Incurred</u> RMB Yuan
Net profit	560,111,821.91	351,739,342.82
Add: Preparation for impairment of assets	13,427,151.04	(6,487,633.49)
Depreciation of fixed assets and investment real estate	209,539,440.75	163,028,361.85
Amortization of intangible assets	35,471,696.78	28,273,899.92
Net income from disposal of fixed assets, investment real estate, intangible assets and other long-term assets	(1,446,513.63)	(333,781.27)
Financial expenses	116,742,902.24	10,788,218.04
Income from investment	(12,756,299.89)	(84,611,614.53)
Deferred tax assets increased /decreased	(4,818,093.13)	235,253.04
Inventory increased	(6,033,032,236.13)	(1,566,639,811.08)
Operating receivables increased	(815,676,084.51)	(537,577,752.18)
Operating payables increased	<u>5,541,370,662.75</u>	<u>3,573,293,039.97</u>
Net cash flow amount generated from operating activities	<u>(391,065,551.82)</u>	<u>1,931,707,523.09</u>

42 Cash flow statement added information (continued)

(2) Major investment and financing activities not involving cash receipt and disbursement:

	<u>This Group</u>			<u>This Company</u>	
	<u>This Year's Amount</u>	<u>Last Year's Amount</u>		<u>This Year's Amount</u>	<u>Last Year's Amount</u>
Fixed assets under financing lease	62,293,126.27	-		62,293,126.27	-

(3) Net change in cash and cash equivalents:

	<u>This Group</u>			<u>This Company</u>	
	<u>This Year's Amount</u>	<u>Last Year's Amount</u>		<u>This Year's Amount</u>	<u>Last Year's Amount</u>
Cash balance at the end of the year	312,115,997.47	655,917,643.24		235,947,238.36	490,775,210.03
Less: Cash balance at the beginning of the year	655,917,643.24	216,890,119.79		490,775,210.03	89,107,048.76
Cash and cash equivalents net (decreased)/increased amounts	<u>(343,801,645.77)</u>	<u>439,027,523.45</u>		<u>(254,827,971.67)</u>	<u>401,668,161.27</u>

(4) Information about the subsidiary and other business units obtained this year:

Information about the subsidiary and other business units obtained:

	<u>This Group</u>	<u>This Company</u>
Prices of the subsidiary and other business units obtained	35,172,300.00	35,172,300.00
Cash and cash equivalents paid by the subsidiary and other business units obtained	35,172,300.00	35,172,300.00
Less: Cash and cash equivalents held by the subsidiary and other business units	9,493,614.26	-
Net cash amount paid by the subsidiary and other business units obtained	<u>25,678,685.74</u>	<u>35,172,300.00</u>
Non-cash assets and liabilities of the subsidiary and other business units obtained	82,572,160.09	
Current assets	76,017,087.22	
Non-current assets	225,353,451.31	
Current liabilities	135,588,378.44	
Non-current liabilities	83,210,000.00	

(5) Cash and cash equivalents held by this group and this Company are analyzed as given below:

	<u>This Group</u>		<u>This Company</u>	
	<u>This Year's Amount</u>	<u>Last Year's Amount</u>	<u>This Year's Amount</u>	<u>Last Year's Amount</u>
(a) Monetary capital	312,115,997.47	655,917,643.24	235,947,238.36	490,775,210.03
- Cash on hand	132,671.00	26,765.18	77,841.84	2,239.87
- Bank deposit that can be used for payment at any time	<u>311,983,326.47</u>	<u>655,890,878.06</u>	<u>235,869,396.52</u>	<u>490,772,970.16</u>
(b) Monetary capital and cash equivalents balance at the end of the year	312,115,997.47	655,917,643.24	235,947,238.36	490,775,210.03
Less: Use restricted monetary capital	-	-	-	-
(c) Cash and cash equivalents balance that can be realized all times at the end of the year	<u>312,115,997.47</u>	<u>655,917,643.24</u>	<u>235,947,238.36</u>	<u>490,775,210.03</u>



#### 43 Risk analysis, sensitivity analysis and fair value of financial instruments

Risks of financial instruments of this Group mainly include:

- Credit risk
- Liquidity risk
- Interest rate risk
- Foreign exchange risk

◦ The following paragraphs main expound the above risk exposures and their formation reasons, risk management goals, policy and process as well as risks measuring methods, etc.

This group has already made the risk management policies in order to recognize and analyze the risks envisaged by this group, set up appropriate risk acceptable levels, design corresponding internal control procedures, and therefore monitor the risk levels of this group. This group will regularly examine these risk management policies and related internal control system in order to be adaptive for changes in market situations or business activities of this group. The internal audit department of this group also regularly or randomly inspect whether the implementation of the internal control system conforms to the risk management policies.

##### (1) Credit risk

Credit risk of this Group mainly comes from the receivables and derivative financial instruments signed for hedging purpose. The management will continuously inspect the exposures of these credit risks.

Main customers of this Group are the companies that make investment and management to the ministry of railway and local railway organizations. Under normal conditions, This Group will not ask the customer to provide securities. To monitor the credit risks of this group, this group will make analysis of the customer's information of this group according to the account ages.

On Dec. 31, 2010, accounts receivables of the first five major customers of this Group and this Company have respectively taken 45% and 32% of total accounts receivables and other receivables of this Group and this Company (in 2009: 76% and 67%), and therefore, this Group may envisage certain level centralized credit risks.

The largest credit risk exposure endured by this Group is the carrying amounts of each financial assets (inclusive derivative financial instruments) specified in the balance sheet. This Group has not yet provided any other guarantee that may incur any credit risk to this Group.

##### (2) Liquidity risk

This Company and subsidiaries are responsible for cash management activities, inclusive short-term investment of cash surplus low borrowing so as to deal with the payable expected cash demand (if the borrowed amount exceeds upper limit of some preset authorizations, then, it must be approved by the Board of Directors of this Company). The policy of this Group is to regularly monitor short-term and long-term current capital demand, and whether it conforms to the requirements of borrowing agreement in order to maintain sufficient cash reserve and securities that can be cashed at any time, and meanwhile, it is to obtain the commitment by main financial organizations to provide sufficient funds in order to meet the demand for short-term and long-term current capital.

Repayment date analysis of long-term liabilities of this Group is given in Note 28.

#### 43 Risk analysis, sensitivity analysis and fair value of financial instruments (continued)

Risks of financial instruments of this Group mainly include (continued):

##### (3) Interest rate risk

Interest bearing financial instruments with fixed and floating interest rates will make this Company to face the fair value interest rate risk and cash flow interest rate risk.

(a) Interest rate financial instruments held by this Group and this Company on Dec. 31 are as shown below:

This Group	<u>2010</u> RMB Yuan	<u>2009</u> RMB Yuan
Fixed interest rate financial instrument		
Financial assets		
- Monetary capital	132,671.00	26,765.18
Financial liabilities		
- Short-term borrowing	71,841,042.07	27,299,340.00
- Long-term borrowing	863,000,000.00	125,000,000.00
- Long-term borrowing due within a year	72,000,000.00	-
Floating interest rate financial instrument		
Financial assets		
- Monetary capital	311,983,326.47	665,890,878.06
Financial liabilities		
- Short-term borrowing	10,000,000.00	37,208,546.52
This Group (This Company?)	<u>2010</u> RMB Yuan	<u>2009</u> RMB Yuan
Fixed interest rate financial instrument		
Financial assets		
- Monetary capital	77,841.84	2,239.87
Financial liabilities		
- Short-term borrowing	61,841,042.07	27,299,340.00
- Long-term borrowing	863,000,000.00	-
- Long-term borrowing due within a year	72,000,000.00	-
Floating interest rate financial instrument		
Financial assets		
- Monetary capital	235,869,396.52	490,772,970.16
Financial liabilities		
- Short-term borrowing	-	8,116,020.00

Risks of financial instruments of this Group mainly include (continued):

(3) Interest rate risk (continued)

(b) Sensitivity analysis

By Dec. 31, 2010, under conditions that other variables remain unchanged, assuming that interest rate varies by 40 basic points, it may lead this Group and this Company to increase/decrease owner's equity by RMB 2,419 Yuan and RMB 2,587 Yuan (in 2009: RMB 2,493 Yuan and RMB 1,972 Yuan), and to increase/decrease net profit by RMB 2,533 Yuan and RMB 2,587 Yuan (in 2009: RMB 2,493 Yuan and RMB 1,972 Yuan).

For financial instruments held on balance sheet that may lead this Group or this Company to face fair value interest rate risks, in the above sensitivity analysis, the influence of net profit form and owner's equity is the influence after new measurement of the above financial instruments is made as per new interest rate on assumption that interest rate varies on the balance sheet date. For the floating interest rate non-derivative financial instruments held on balance sheet that may lead this Group or this Company to face cash flow interest rate risks, in the above sensitivity analysis, net profit and owner's equity influences are the influence of the above interest rate variation on the interest expenditure or income estimated as per year. The analysis made in 2009 was based on the same assumption and methods.

(4) Foreign exchange risk

For accounts receivable and accounts payable not valued in recording currency, if short-term unbalance occurs, then, this Group may buy or sell foreign currency as per market exchange rate when necessary in order to maintain the net risk exposure at the acceptable level.

- (a) Foreign exchange risk exposures of all the foreign currency assets liability items of this Group and this Company on Dec. 31 are given below. In consideration of statement report, the risk exposure amounts are given in RMB Yuan, and the conversion is made as per spot rate on the balance sheet date. Foreign currency statement report conversion balance and other risk exposure items not included are excluded.

This Group	2010				
	USD	Euro	Yen	HKD	GBP
Monetary capital	674,481.06	9,915,240.82	209,701.83	18,401,473.41	-
Accounts receivable	184,965,503.58	22,905,340.86	-	-	-
Short-term borrowing	-	-	(61,841,042.07)	-	-
Accounts payable	(1,647,457.82)	(4,374,431.08)	(11,146,626.46)	-	(20,666.31)
Balance sheet exposure net value	<u>183,992,526.83</u>	<u>28,446,150.60</u>	<u>(72,777,966.71)</u>	<u>18,401,473.41</u>	<u>(20,666.31)</u>



## 43 Risk analysis, sensitivity analysis and fair value of financial instruments (continued)

Risks of financial instruments of this Group mainly include (continued):

## (4) Foreign exchange risk (continued)

(a) Foreign exchange risk exposures of all the foreign currency assets liability items of this Group and this Company on Dec. 31 are given below. In consideration of statement report, the risk exposure amounts are given in RMB Yuan, and the conversion is made as per spot rate on the balance sheet date. Foreign currency statement report conversion balance and other risk exposure items not included are excluded. (continued)

This Group	2009				
	USD	Euro	Yen	HKD	GBP
Monetary capital	281,265,635.79	26,764,595.50	2,270,240.41	91,180,012.53	166,358.28
Accounts receivable	-	158,680,544.30	-	-	-
Short-term borrowing	(28,470,396.70)	-	(36,037,489.82)	-	-
Accounts payable	(3,043,379.89)	(7,132,724.74)	(11,332,111.89)	-	(38,201.90)
Balance sheet exposure net value	<u>249,751,859.20</u>	<u>178,312,415.06</u>	<u>(45,099,361.30)</u>	<u>91,180,012.53</u>	<u>128,156.38</u>
This Company	2010				
	USD	Euro	Yen	HKD	GBP
Monetary capital	643,128.01	545,634.98	128,441.75	18,401,473.41	-
Accounts receivable	184,965,503.58	-	-	-	-
Short-term borrowing	-	-	(61,841,042.07)	-	-
Accounts payable	(709,415.88)	(3,581,096.21)	(8,307,054.84)	-	(20,666.31)
Balance sheet exposure	<u>184,899,215.72</u>	<u>(3,035,461.23)</u>	<u>(70,019,655.17)</u>	<u>18,401,473.41</u>	<u>(20,666.31)</u>
This Company	2009				
	USD	Euro	Yen	HKD	GBP
Monetary capital	281,233,346.73	25,616,186.40	2,196,458.41	91,180,012.53	166,358.28
Accounts receivable	-	152,992,889.43	-	-	-
Short-term borrowing	-	-	(35,415,360.00)	-	-
Accounts payable	(1,731,526.92)	(5,380,157.02)	(8,291,948.73)	-	(38,201.90)
Balance sheet exposure	<u>279,501,819.81</u>	<u>173,228,918.81</u>	<u>(41,510,850.32)</u>	<u>91,180,012.53</u>	<u>128,156.38</u>

(b) Main exchange rates applicable for this Group and this Company are analyzed as given below:

This Year's Amount

Last Year's Amount

	Average Exchange Rate	Medium Exchange Rate on Report Day	Average Exchange Rate	Medium Exchange Rate on Report Day
USD	6.7255	6.6227	6.8314	6.8282
Euro	9.3018	8.8065	9.7281	9.7971
Yen	0.0776	0.0813	0.0748	0.0738
HKD	0.8657	0.8509	0.8812	0.8805
Swiss Franc	6.8253	7.0567	6.5281	6.5938
GBP	10.5981	10.2182	10.4289	10.9780

#### 43 Risk analysis, sensitivity analysis and fair value of financial instruments (continued)

Risks of financial instruments of this Group mainly include (continued):

##### (4) Foreign exchange risk (continued)

##### (c) Sensitivity analysis

Assuming other risk variables remaining unchanged except foreign exchange rate, the increase (decrease) in the owner's equity and net profits of this Group and this Company caused by 1% average rise in exchange rate for conversion between RMB Yuan and USD, Euro, Yen and HKD on Dec. 31 is given below. This influence is converted and expressed in RMB as per spot exchange rate as given on balance sheet date.

	<u>Owner's Equity</u>		<u>Profit and Loss</u>	
	RMB Equivalents of This Group	RMB Equivalents of This Company	RMB Equivalents of This Group	RMB Equivalents of This Company
On Dec. 31, 2010				
USD	1,839,925.27	1,848,992.16	1,564,843.17	1,571,643.33
EURO	94,454.64	(30,354.61)	67,805.52	(25,801.42)
YEN	(727,779.67)	(700,196.55)	(615,854.41)	(595,167.07)
HKD	184,014.73	184,014.73	156,412.52	156,412.52
GBP	(206.66)	(206.66)	(175.66)	(175.66)
On Dec. 31, 2009				
USD	2,497,518.59	27,950,181.98	21,526,407.64	23,757,654.68
EURO	1,783,124.15	2,592,368.43	15,105,720.32	14,724,458.10
YEN	(450,993.61)	(4,151,085.03)	(3,797,560.60)	(3,528,422.28)
HKD	911,800.13	9,118,001.25	7,750,301.07	7,750,301.07
Swiss Franc	1,281.56	12,815.64	10,893.29	10,893.29

Assuming other variables remaining unchanged on Dec. 31, changes in the owner's equity and profit/loss of caused by 1% devaluation in exchange rate for conversion between RMB Yuan and USD, Euro, Yen and HKD is given in the amounts as shown in the above table, however, the direction is opposite.

The above sensitivity analysis is made on assumption that changes have happened to the exchange rate on the balance sheet date, and re-calculation have been made to the financial instruments held by this Group on the balance sheet date after changes in the exchange rate that envisage foreign exchange risks. The above analysis does not include the conversion differences in the foreign currency statements and description of risk exposure items not included. Analysis for 2009 is based on the same assumption and methodology.



#### 43 Risk analysis, sensitivity analysis and fair value of financial instruments (continued)

##### (5) Fair value

No major difference is found between financial liability book value and fair value of all financial assets of this Group on Dec. 31.

##### (6) Fair value determination methods and assumptions

For trading financial assets and liabilities, saleable financial assets and fair value information disclosed as per above 46 (5) calculated as per fair value on the balance sheet date, this Group uses the following main methods and assumptions when estimating the fair values of the financial instruments.

##### Derivative instruments

Fair value of forward exchange contract is determined according to the market price; or determined on the difference between current value as per contract forward exchange price and spot exchange price given on balance sheet.

#### 44 Commitment

##### (a) Capital commitment

On Dec. 31, the capital commitments of this Group and this Company are as shown below:

<u>This Group</u>	<u>2010</u> RMB Yuan	<u>2009</u> RMB Yuan
Contract signed		
House and building structure	716,797,644.80	618,340,545.89
Communication equipment	382,581,514.00	277,966,410.02
Miscellaneous	<u>17,406,332.03</u>	<u>-</u>
Total	<u>1,116,785,490.83</u>	<u>896,306,955.91</u>

<u>This Company</u>	<u>2010</u> RMB Yuan	<u>2009</u> RMB Yuan
Contract signed		
House and building structure	716,797,644.80	618,340,545.89
Communication equipment	<u>330,086,939.60</u>	<u>277,966,410.02</u>
Miscellaneous	<u>1,046,884,584.40</u>	<u>896,306,955.91</u>

#### 45 Related parties and their transactions

(1) Information about parent company and ultimate holding company of this Company:

<u>Company Name</u>	<u>Registered Place</u>	<u>Business Nature</u>	<u>Registered Capital</u>	<u>Proportion of Shareholding of This Company</u>	<u>Proportion of Vote Rights of This Company</u>	<u>Relation with This Company</u>
China North Railway Vehicles Co., Ltd.	Beijing	Manufacturing Industry	8,300,000,000	93.29%	93.29%	Parent Company

The ultimate holding company of this Company is China North Locomotive Vehicles Industry Group Co.

Registered capital and changes of the main related parties with control relations:

<u>Company Name</u>	<u>Amount at beginning of the year</u> Amount	%	<u>This year's increase</u> Amount	%	<u>This year's decrease</u> Amount	%	<u>Amount at the end of the year</u> Amount	%
China North Railway Vehicles Co., Ltd.	1,128,268,521.00	67.48%	407,410,730.00	19.59%	-	-	1,535,679,251.00	73.85%

(2) Please refer to Note 6 for detail information about subsidiaries of this Company.

(3) Please refer to Note 16 for detail information about important cooperative and associated companies.

(4) Transactions between this Group and this Company and key managerial staff

	<u>This Group</u>		<u>This Company</u>	
	<u>This Year's Amount</u> RMB Yuan	<u>Last Year's Amount</u> RMB Yuan	<u>This Year's Amount</u> RMB Yuan	<u>Last Year's Amount</u> RMB Yuan
Remuneration paid to key managerial staff	6,615,360.00	9,443,314.70	5,886,960.00	9,292,446.00

The above transactions with key managerial staff are made as per normal commercial provisions or related agreements.

45 Related parties and their transactions (continued)

(5) Transactions between this Group and this Company and related parties except key managerial staff:

(a) Amounts of transactions with related parties:

<u>This Group</u>	<u>This Year</u> RMB Yuan	<u>Last Year</u> RMB Yuan
Commodity sale	750,124,987.27	655,614,048.84
Material procurement	1,362,029,732.27	484,266,793.17
Interest income	113,888.89	4,297,908.91
Interest expense	64,624,446.66	31,032,623.64
Dividend pay	53,041,644.53	41,514,360.00
Fixed assets under financing lease	60,474,466.07	-
Labour service providing	12,839,900.00	1,320,000.00
Labour service receiving	239,918,584.03	2,304,863.55

<u>This Company</u>	<u>This Year</u> RMB Yuan	<u>Last Year</u> RMB Yuan
Commodity sale	919,820,078.86	748,566,896.37
Material procurement	1,401,309,102.27	613,162,856.24
Interest income	113,888.89	4,297,908.91
Interest expense	36,946,315.41	31,032,623.64
Dividend pay	53,041,644.53	41,514,360.00
Fixed assets under financing lease	60,474,466.07	-
Labour service providing	11,610,000.00	8,120,000.00
Labour service receiving	230,840,504.63	2,304,863.55



45 Related parties and their transactions (continued)

(5) Transactions between this Group and this Company and related parties except key managerial staff (continued):

(b) Balance of transactions with related parties on Dec. 31 is given below:

<u>This Group</u>	<u>Balance at the End of the Year</u>	<u>Balance at Beginning of the Year</u>
	RMB Yuan	RMB Yuan
Accounts receivable	48,363,101.67	371,559,522.84
Advance payment	416,994,972.60	484,139,792.73
Other receivables	832,147.58	20,624,509.20
Other current assets	-	200,000,000.00
Bad debts provision	214,966.91	2,135,156.87
Deposit received	189,707,265.14	-
Notes payable	42,387,297.83	25,978,490.73
Accounts payable	230,450,541.08	227,333,178.47
Dividends payable	24,285,517.95	17,390,758.06
Other payables	19,410,987.47	3,731,480.82
Payroll payable	28,085,848.70	64,723,372.74
Interest payable	2,101,008.47	2,043,236.25
Long-term borrowing	863,000,000.00	125,000,000.00
Non-current liabilities due within a year	82,720,853.86	-
Long-term payables	49,753,612.21	-
Balance of related party guarantee bills received	-	-

46 Related parties and their transactions (continued)

(5) Transactions between this Group and this Company and related parties except key managerial staff (continued):

(b) Balance of transactions with related parties on Dec. 31 is given below (continued):

<u>This Company</u>	<u>Balance at the End of the Year</u> RMB Yuan	<u>Balance at Beginning of the Year</u> RMB Yuan
Accounts receivable	162,517,584.67	397,086,196.37
Advance payment	637,885,587.50	484,139,792.73
Other receivables	832,147.58	20,624,509.20
Bad debts provision	214,966.91	2,135,156.87
Other current assets	-	200,000,000.00
Deposit received	162,022,413.11	-
Notes payable	42,387,297.83	25,978,490.73
Accounts payable	276,625,242.01	259,759,063.90
Dividends payable	24,285,517.95	17,390,758.06
Other payables	23,227,829.78	9,835,084.26
Payroll payable	28,085,848.70	64,723,372.14
Interest payable	2,101,008.47	2,043,236.25
Long-term borrowing	863,000,000.00	125,000,000.00
Non-current liabilities due within a year	82,720,853.86	-
Long-term payables	49,753,612.21	-
Balance of related party guarantee bills received	-	-



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## 审计报告

KPMG-A(2012)AR No.0349

长春轨道客车股份有限公司董事会:

我们审计了后附的第1页至第92页的长春轨道客车股份有限公司(以下简称“贵公司”)财务报表,包括2011年12月31日的合并资产负债表和资产负债表、2011年度的合并利润表和利润表、合并现金流量表和现金流量表、合并所有者权益变动表和所有者权益变动表以及财务报表附注。

### 一、管理层对财务报表的责任

编制和公允列报财务报表是贵公司管理层的责任,这种责任包括:(1)按照中华人民共和国财政部颁布的企业会计准则的规定编制财务报表,并使其实现公允反映;(2)设计、执行和维护必要的内部控制,以使财务报表不存在由于舞弊或错误导致的重大错报。

### 二、注册会计师的责任

我们的责任是在执行审计工作的基础上对财务报表发表审计意见。我们按照中国注册会计师审计准则的规定执行了审计工作。中国注册会计师审计准则要求我们遵守中国注册会计师职业道德守则,计划和执行审计工作以对财务报表是否不存在重大错报获取合理保证。

审计工作涉及实施审计程序,以获取有关财务报表金额和披露的审计证据。选择的审计程序取决于注册会计师的判断,包括对由于舞弊或错误导致的财务报表重大错报风险的评估。在进行风险评估时,注册会计师考虑和公允列报相关的内部控制,以设计恰当的审计程序,但目的并非对内部控制的有效性发表意见。审计工作还包括评价管理层选用会计政策的恰当性和作出会计估计的合理性,以及评价财务报表的总体列报。

我们相信,我们获取的审计证据是充分、适当的,为发表审计意见提供了基础。



## 审计报告 (续)

KPMG-A(2012)AR No.0349

## 三、审计意见

我们认为，贵公司财务报表在所有重大方面按照中华人民共和国财政部颁布的企业会计准则的规定编制，公允反映了贵公司 2011 年 12 月 31 日的合并财务状况和财务状况以及 2011 年度的合并经营成果和经营成果及合并现金流量和现金流量。



中国注册会计师

周朋

周朋



中国 北京

郭颖

郭颖



二〇一二年四月九日

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## Audit Report

KPMG-A(2012)AR No. 0349

Board of Directors of Changchun Railway Vehicles Co., Ltd.,

We audited the financial statements (page 1 to page 92) attached of Changchun Railway Vehicles Co., Ltd. (hereinafter referred to as “your company”), including Combination Balance Sheet and Balance Sheet dated Dec. 31, 2011, and Combination Income Statement and Income Statement, Combination Cash Flow and Cash Flow, Combination Equity Change Statement of Owners and Equity Change Statement of Owners, and Notes to Financial Statements of Year 2011.

### 1. Responsibility of Management on Financial Statements

It is the responsibility of management of your company to make financial statements and report fairly. The responsibility includes: (1) Make financial statements in accordance with the stipulations of Accounting Standard for Enterprise issued by the Ministry of Finance of P.R.C., and make it realize the fair reflection; (2) Design, implement and maintain necessary internal control, for the purpose of guaranteeing that there is no material misstatement result from embezzlements or mistakes in the financial statements.

### II. Responsibility of Certified Public Accountants

Our responsibility is to announce our opinions on the financial statements on the basis of implementing audit work. We have implemented audit work as per the regulations in auditing criterion of Chinese Certified Public Accountants. Auditing standard of Chinese certified public accountants requires us to plan and implement audit work by abiding by professional work ethic, and achieve reasonable assurance on whether or not there is no material misstatement in financial report.

Audit work involves audit procedure implementation for the purpose of achieving relevant audit proof for the amount and disclosure of financial statement. It is certified public accountants' opinions that which audit procedure will be chosen, including the assessment of material misstatement risks in the financial statement result from embezzlements or mistakes. When we do risk assessment, we have considered the internal control relates to the making of financial statement for the purpose of designing suitable audit procedure, but giving effective opinions on internal control is not our purpose. Audit work also includes assessing the adequacy of accounting policies selected by management and rationality of accountant estimates which have been made, assessing overall presentation of the financial statement.

We guarantee that the audit evidence we have achieved is adequate and suitable, which provides basis for giving audit opinions.

KPMG Huazhen, a Sino-foreign joint venture in China and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.

**KPMG**

## **Audit Report (Continued)**

**KPMG-A(2012)AR No. 0349**

### **III. Audit Opinion**

In our opinion, the financial statements of your company have been made as regulations in the Accounting Standard for Enterprise issued by Ministry of Finance of the People's Republic of China in material areas and fairly reflect the combination financial condition and financial condition of the company dated Dec. 31, 2011 and combination business result and business result, combination cash flow and cash flow of your company in 2011.

KPMG HUAZHEN (Seal)

Chinese Certified Public Accountants:

Zhou Peng (Signature and Name Stamp)

Guo Ying (Signature and Name Stamp)

Beijing, China

Apr. 9, 2012



# 公 证 书

(2013)吉长信维证外字第 17043 号

申请人: 长春轨道客车股份有限公司, 企业法人营业执照注册号: 220000000093577, 住所: 长春市长客路 2001 号。

法定代表人: 董晓峰, 男, 一九五四年十二月一日出生, 公民身份号码: 220103195412013712。

公证事项: 复印件与原件相符

兹证明前面的复印件与《审计报告》的原件相符。

中华人民共和国吉林省长春市信维公证处

公证员:

张英姿

二〇一三年六月八日



# NOTARIAL CERTIFICATE

(Translation)

(2013) J C X W Z W Zi, No.17043

Applicant: Changchun Railway Vehicles Co., Ltd.,  
Registration No. of Business License of Legal Entity:  
220000000093577, Address: No.2001, Changke Road, Changchun  
City.

Legal Representative: Dong Xiaofeng, male, was born on  
December 1, 1954, I.D. Card No.: 220103195412013712.

Notarized Matter: THE DUPLICATE COPY IS IN CONFORMITY WITH  
THE ORIGINAL COPY

This is to certify that the duplicate copy attached hereto  
is in conformity with the original copy of AUDIT REPORT.

Notary: Zhang Yingzi

Xinwei Notary Public Office of  
Changchun City, Jilin Province  
The People's Republic of China  
June 8, 2013

# **Changchun Railway Vehicles Co., Ltd.**

Financial Statements (Jan. 1, 2011 to Dec. 31, 2011)



Changchun Railway Vehicles Co., Ltd.  
Combination Balance Sheet  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Assets			
Current assets			
Monetary fund	6	423,731,408.09	312,115,997.47
Receivable notes	7	76,680,704.00	-
Receivables	8	3,236,355,129.54	714,795,620.89
Prepayment	9	1,538,875,528.29	2,741,362,697.15
Receivable dividends	13(3)	60,000,000.00	-
Other receivables	10	119,070,341.71	89,131,734.26
Inventory	11	12,917,752,643.36	8,671,879,497.13
Other current assets	12	56,336,038.54	356,951,185.72
Total current assets		<u>18,428,801,793.53</u>	<u>12,886,236,732.62</u>
Non-current assets			
Long-term investment on stocks	13	178,595,957.92	248,643,443.46
Fixed assets	14	3,967,786,217.41	2,850,837,352.36
Construction-in-process	15	2,799,536,554.02	2,168,838,303.81
Project goods and material		14,733,131.29	581,536,203.32
Intangible asset	16	1,170,747,568.26	888,673,159.05
Development expenses		214,592.15	8,620,259.08
Long-term deferred expense		933,040.75	3,130,339.27
Deferred income tax asset	17	39,669,135.58	24,486,993.77
Other non-current asset		167,108,404.00	227,588,404.00
Total non-current asset		<u>8,339,324,601.38</u>	<u>7,002,354,458.12</u>
Total asset		<u>26,768,126,394.91</u>	<u>19,888,591,190.74</u>

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.

Changchun Railway Vehicles Co., Ltd.  
Combination Balance Sheet (Continued)  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Liability and Equity of Owners			
Current liabilities			
Short-term loans	19	2,872,805,884.26	81,841,042.07
Notes payable	20	2,002,849,370.36	470,760,472.04
Account payable	21	7,758,966,828.46	3,899,795,483.89
Deposit received	22	4,189,465,755.17	8,211,074,369.94
Accrued wages for employees	23	196,815,255.20	201,058,681.77
Tax payable	4(3)	19,136,459.26	38,871,705.54
Interest payable		5,726,930.58	2,128,933.47
Dividend payable		316,386,013.58	24,285,517.95
Other payables	24	328,936,627.41	327,793,104.49
Non-current liability to be due in one year	25	167,242,863.36	82,720,853.86
Estimated liabilities	26	160,038,037.39	96,203,977.05
Total current liabilities		<u>18,018,370,025.03</u>	<u>13,436,534,142.07</u>
Long-term liabilities			
Long-term loan	27	1,091,680,000.00	863,000,000.00
Long-term payables	28	911,634,191.67	173,328,969.52
Special payables		75,890,000.00	-
Other non-current liabilities	29	478,756,141.89	144,797,521.54
Total non-current liabilities		<u>2,557,960,333.56</u>	<u>1,181,126,491.06</u>
Total liabilities		<u>20,576,330,358.59</u>	<u>14,617,660,633.13</u>

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.

Changchun Railway Vehicles Co., Ltd.  
Combination Balance Sheet (Continued)  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Liability and Equity of Owners			
(continued)			
Equity of Owners			
Paid-in capital	30	2,079,387,600.00	2,079,387,600.00
Capital reserves	31	2,489,729,081.80	2,489,729,081.80
Surplus reserves	32	205,483,379.66	82,784,589.33
Undistributed profit	33	1,350,616,420.18	588,820,884.64
Total equity of owners held by parent company		6,125,216,481.64	5,240,722,155.77
Equity of minor shareholders		66,579,554.68	30,208,401.84
Total equity of owners		6,191,796,036.32	5,270,930,557.61
Total liabilities and equity of owners		26,768,126,394.91	19,888,591,190.74

The financial statement has been approved by the management on Apr. 9, 2012.

Dong Xiaofeng

Legal representative

Lu Xiwei (Signature and Name Stamp)

Company's responsible person in charge of accounting work

Di Jinying (Signature and Name Stamp)

Financial Director

Liu Qi (Signature and Name Stamp)

Responsible person in accounting institution

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.



Changchun Railway Vehicles Co., Ltd.  
Balance Sheet  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Assets			
Current assets			
Monetary fund	6	348,336,436.13	235,947,238.36
Receivable notes	7	66,680,704.00	-
Receivables	8	3,313,978,622.91	690,486,110.50
Prepayment	9	1,531,410,313.97	2,948,363,853.39
Receivable dividends	13(3)	113,117,090.36	84,249,805.87
Other receivables	10	60,000,000.00	-
Inventory	11	12,702,930,399.99	8,624,634,420.24
Other current assets	12	30,880,880.58	342,626,787.62
Total current assets		<u>18,167,334,447.94</u>	<u>12,926,308,215.98</u>
Non-current assets			
Long-term investment on stocks	13	306,993,063.57	368,624,394.46
Fixed assets	14	3,655,390,453.43	2,737,966,590.17
Construction-in-process	15	2,730,140,901.68	1,986,348,645.52
Project goods and material		14,733,131.29	581,536,203.32
Intangible asset	16	1,129,156,563.84	845,515,477.95
Development expenses		-	8,378,010.05
Long-term deferred expense		898,040.75	3,053,339.27
Deferred income tax asset	17	34,409,135.18	22,455,304.00
Other non-current asset		142,416,164.00	227,588,404.00
Total non-current asset		<u>8,014,137,453.74</u>	<u>6,781,466,368.74</u>
Total asset		<u>26,181,471,901.68</u>	<u>19,707,774,584.72</u>

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.

Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Liability and Equity of Owners			
Current liabilities			
Short-term loans	19	2,767,805,884.26	61,841,042.07
Notes payable	20	1,896,865,044.68	470,760,472.04
Account payable	21	7,492,193,244.08	3,888,587,728.62
Deposit received	22	4,189,118,356.90	8,161,314,488.88
Accrued wages for employees	23	193,324,740.63	199,364,320.69
Tax payable	4(3)	12,610,610.86	33,161,545.40
Interest payable		5,514,540.44	2,101,008.47
Dividend payable		316,386,013.58	24,285,517.95
Other payables	24	310,336,223.60	270,321,384.51
Non-current liability to be due in one year	25	167,242,863.36	82,720,853.86
Estimated liabilities	26	159,655,707.32	95,978,055.56
Total current liabilities		<u>17,511,053,229.71</u>	<u>13,290,436,418.05</u>
Long-term liabilities			
Long-term loan	27	1,091,680,000.00	863,000,000.00
Long-term payables	28	911,634,191.67	173,328,969.52
Special payables		75,890,000.00	-
Other non-current liabilities	29	473,703,958.21	132,857,521.54
Total non-current liabilities		<u>2,552,908,149.88</u>	<u>1,169,186,491.06</u>
Total liabilities		<u>20,063,961,379.59</u>	<u>14,459,622,909.11</u>

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.

Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31, 2011  
(Currency Unit: RMB Yuan)

	Note	<u>Year 2011</u>	<u>Year 2010</u>
Liability and Equity of Owners			
(continued)			
Equity of Owners			
Paid-in capital	30	2,079,387,600.00	2,079,387,600.00
Capital reserves	31	2,449,637,374.45	2,449,637,374.45
Surplus reserves	32	205,483,379.66	82,784,589.33
Undistributed profit	33	1,383,002,167.98	636,342,111.83
Total equity of owners		6,117,510,522.09	5,248,151,675.61
Total liabilities and equity of owners		26,181,471,901.68	19,707,774,584.72

The financial statement has been approved by the management on Apr. 9, 2012.

Dong Xiaofeng

Legal representative

Lu Xiwei (Signature and Name Stamp)

Company's responsible person in charge of accounting work

Di Jinying (Signature and Name Stamp)

Financial Director

Liu Qi (Signature and Name Stamp)

Responsible person in accounting institution

Note to Financial Statements (Page 17-92) is the constituent part of the financial statements.



Changchun Railway Vehicles Co., Ltd.

Consolidated Income Statement

2011

(Current : RMB Yuan)

	Annotations	2011	2010
Revenue	34	23,389,398,704.28	10,768,580,710.95
Minus : Cost of sales		19,940,913,642.21	8,874,082,017.79
Business Tax and Addition		17,612,592.71	3,876,022.33
Sales Expense		462,470,692.62	291,928,982.65
Administrative Expense		1,094,731,189.93	892,902,927.14
Financial Expense	35	435,878,989.44	199,188,175.87
Loss of Impairment of Assets	36	28,120,560.97	19,110,678.58
Plus: Net investment (loss) / income	37	(17,650,090.97)	8,438,388.01
( Among : investment in joint venture			
( Loss )/ income)		(17,926,824.97)	12,756,299.89
Business Profit		1,392,020,945.43	495,930,294.60
Plus : income from non-business activities	38	81,056,745.16	89,578,480.83
Minus : expense from non-business activities	39	46,551,761.35	25,677,116.17
( Including : obsolescence loss on disposal of non-current assets )		-	479,534.16
Profit		1,426,525,929.24	559,831,659.26
Minus : income tax	40	197,031,393.71	56,774,267.19
Net profit		1,229,494,535.53	503,057,392.07
Net Profit Attributable to Owners of the Parent Corporation		1,242,123,382.69	519,788,196.89
Minority Interests		(12,628,847.16)	(16,730,804.82)
Other Comprehensive Income		-	-
Total Comprehensive Income		1,229,494,535.53	503,057,392.07
Comprehensive Income Attributable to Owners of the Parent Corporation		1,242,123,382.69	519,788,196.89
Comprehensive Income Attributable to the Minority Shareholders		(12,628,847.16)	(16,730,804.82)

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements

Changchun Railway Vehicles Co., Ltd.

Consolidated Income Statement

2011

(Current : RMB Yuan)

	Annotations	2011	2010
Revenue	34	23,479,429,726.02	10,707,257,087.28
Minus : Cost of sales		20,111,360,567.19	8,856,439,023.72
Business Tax and Addition		14,931,123.73	2,788,896.69
Sales Expense		445,628,009.00	285,247,372.88
Administrative Expense		1,046,126,825.07	819,447,852.60
Financial Expense	35	431,479,155.13	187,479,477.19
Loss of Impairment of Assets	36	29,623,265.87	13,427,151.04
Plus: Net investment (loss) / income	37	(15,953,938.10)	8,438,388.01
( Among : investment in joint venture			
( Loss )/ income)		(17,926,824.97)	12,756,299.89
Business Profit		1,384,326,841.93	550,865,701.17
Plus : income from non-business activities	38	75,299,459.58	86,089,754.25
Minus : expense from non-business activities	39	46,269,957.85	25,357,404.31
( Including : obsolescence loss on disposal of non-current assets )		-	477,204.66
Profit		1,413,356,343.66	611,598,051.11
Minus : income tax	40	186,368,440.36	51,486,229.20
Net profit		1,226,987,903.30	560,111,821.91
Other Comprehensive Income		-	-
Total Comprehensive Income		1,226,987,903.30	560,111,821.91

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements

Changchun Railway Vehicles Co., Ltd.

CASH FLOW STATEMENT

2011

(Current : RMB Yuan)

	Annotations	<u>2011</u>	<u>2010</u>
Cash Flow from Operating Activities :			
Cash from Selling Commodities or Offering Labor		19,595,283,043.35	16911,216,301.29
Refund of tax and fee received		106,878,193.44	234,177,517.70
Other Cash Received Related to Operating Activities		398,665,630.08	149,702,970.09
Operating Activities Cash Inflow Subtotal		<u>20100,826,766.87</u>	<u>17,295,096,789.08</u>
Cash Paid for Commodities or Labor		(19,436,950,066.41)	(15,436,251,499.98)
Cash Paid to and for Employees		(1,502,425,009.05)	(1,063,772,245.37)
Taxes and Fees Paid		(411,196,266.72)	(254,129,077.03)
Other Cash Paid Related to Operating Activities		(709,754,271.41)	(558,208,797.49)
Operating Activities Cash Outflow Subtotal		<u>(22,060,325,613.59)</u>	<u>(17,32,361,619.87)</u>
Cash Flow Generated from Operating Activities Net Amount	41(1)	<u>(1,959,498,846.72)</u>	<u>(47,264,830.79)</u>
Cash Flow from Investing Activities:			
Cash from Investment Withdrawal		-	200,000,000.00
Cash from Investment Income		276,734.00	113,888.89
Net Cash from Disposing Fixed Assets		206,853.46	2,343,363.73
Investing Activities Cash Inflow Subtotal		<u>483,587.46</u>	<u>202,457,252.62</u>
Cash Paid for Buying Fixed Assets , Intangible Assets and Other Long-term Investment			
Cash Paid for Other Long-term Assets		(1,542,682,362.71)	(1,977,419,781.87)
Net Cash Obtained by the Subsidiaries and Other Business Companies Paying			
Net Cash Paid		-	(25,678,685.74)
Investing Activities Cash Outflow Subtotal		<u>(1,542,682,362.71)</u>	<u>(2,003,098,467.61)</u>
Cash Flow Generated from Investing Activities Net Amount		<u>(1,542,198,775.25)</u>	<u>(1,800,641,214.99)</u>

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements .



Changchun Railway Vehicles Co., Ltd.  
Consolidated Cash Flow Statement (Continued)

2011

(Current : RMB Yuan)

	Annotations	<u>2011</u>	<u>2010</u>
<b>Cash Flow from Financing Activities:</b>			
Cash Received from Accepting Investment		124,890,000.00	1,053,422,620.12
Among : the cash received from accepting the investment of the minority shareholders for the subsidiaries		49,000,000.00	-
Borrowings		9,859,515,559.73	5,062,428,464.27
Other Cash Received Related to Financing Activities		809,045,380.00	-
<b>Financing Activities Cash Inflow Subtotal</b>		<u>10,793,450,939.73</u>	<u>6,115,851,084.39</u>
Cash Paid for Debt		(6,738,822,195.326)	(4,422,087,328.27)
Cash Paid for Dividend , Profit or Interest		(361,348,722.87)	(136,294,381.37)
Other Cash Paid Related to Financing Activities		(67,167,575.58)	(459,391.69)
<b>Financing Activities Cash Outflow Subtotal</b>		<u>(7,167,338,493.71)</u>	<u>(4,558,841,101.33)</u>
<b>Cash Flow from Financing Activities Net Amount</b>		<u>3,626,112,446.02</u>	<u>1,557,009,983.06</u>
The influence on Cash and Cash Equivalents from foreign currency rate		(12,799,413.43)	(52,905,583.05)
<b>Net Increase/(Decrease) Of Cash and Cash Equivalents</b>	41(3)	111,615,410.62	(343,801,364.77)
Plus: the balance of cash and cash equivalents at the beginning of the year		312,115,997.47	655,917,643.24
<b>The balance of cash and cash equivalents at the end of the year</b>	41(4)	<u>423,731,408.09</u>	<u>312,115,997.47</u>

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements .

Changchun Railway Vehicles Co., Ltd.

CASH FLOW STATEMENT

2011

(Current : RMB Yuan)

	Annotations	<u>2011</u>	<u>2010</u>
<b>Cash Flow from Operating Activities :</b>			
Cash from Selling Commodities or Offering Labor		19,587,910,873.16	16,781,548,877.28
Refund of tax and fee received		105,645,564.45	232,579,962.44
Other Cash Received Related to Operating Activities		396,936,935,494.85	52,955,140.89
<b>Operating Activities Cash Inflow Subtotal</b>		<b>20,090,491,932.46</b>	<b>17,067,083,980.61</b>
<b>Cash Paid for Commodities or Labor</b>		<b>(19,554,726,932.10)</b>	<b>(15,616,572,157.59)</b>
Cash Paid to and for Employees		(1,473,230,482.78)	(1,049,507,603.09)
Taxes and Fees Paid		(381,130,594.60)	(237,838,723.57)
Other Cash Paid Related to Operating Activities		(668,501,649.48)	(554,231,048.18)
<b>Operating Activities Cash Outflow Subtotal</b>		<b>(22,077,589,658.96)</b>	<b>(17,458,149,532.43)</b>
<b>Cash Flow Generated from Operating Activities Net Amount</b>	<b>41(1)</b>	<b>(1,987,097,726.50)</b>	<b>(391,065,551.82)</b>
<b>Cash Flow from Investing Activities:</b>			
Cash from Investment Withdrawal		29,663,400.03	200,000,000.00
Cash from Investment Income		15,035,420.86	113,888.89
Net Cash from Disposing Fixed Assets		206,853.46	2,343,363.73
<b>Investing Activities Cash Inflow Subtotal</b>		<b>44,905,674.35</b>	<b>202,457,252.62</b>
<b>Cash Paid for Buying Fixed Assets , Intangible Assets and Other Long-term Investment</b>			
Cash Paid for Other Long-term Assets		(1,378,647,660.52)	(771,336,057.18)
Net Cash Obtained by the Subsidiaries and Other Business Companies Paying			
Net Cash Paid		-	(35,172,300.00)
Cash Paid by Investment		(51,000,000.00)	-
<b>Investing Activities Cash Outflow Subtotal</b>		<b>(1,429,647,660.52)</b>	<b>(806,508,357.18)</b>
<b>Cash Flow Generated from Investing Activities Net Amount</b>		<b>(1,384,741,986.17)</b>	<b>(604,051,104.56)</b>

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements .

**Changchun Railway Vehicles Co., Ltd.**  
**Consolidated Cash Flow Statement (Continued)**

**2011**

(Current : RMB Yuan)

	Annotations	<u>2011</u>	<u>2010</u>
<b>Cash Flow from Financing Activities:</b>			
Cash Received from Accepting Investment		75,890,000.00	1,053,422,620.12
Borrowings		9,685,476,622.37	4,032,428,464.27
Other Cash Received Related to Financing Activities		809,045,380.00	24,791,994.43-
<b>Financing Activities Cash Inflow Subtotal</b>		<u>10,570,412,002.37</u>	<u>5,110,643,078.82</u>
<b>Cash Paid for Debt</b>		<u>(6,649,783,257.90)</u>	<u>(4,206,002,782.20)</u>
Cash Paid for Dividend , Profit or Interest		(357,529,650.69)	(111,870,179.47)
Other Cash Paid Related to Financing Activities		(67,167,575.58)	-
<b>Financing Activities Cash Outflow Subtotal</b>		<u>(7,074,480,484.17)</u>	<u>(4,317,872,961.67)</u>
<b>Cash Flow from Financing Activities Net Amount</b>		<u>3,495,931,518.20</u>	<u>792,770,117.15</u>
<b>The influence on Cash and Cash Equivalents from foreign currency rate</b>		<u>(11,702,607.76)</u>	<u>(52,481,432.44)</u>
<b>Net Increase/(Decrease) Of Cash and Cash Equivalents</b>	41(3)	112,389,197.11	(254,827,971.67)
<b>Plus: the balance of cash and cash equivalents at the beginning of the year</b>		235,947,238.36	490,775,210.03
<b>The balance of cash and cash equivalents at the end of the year</b>	41(4)	<u>348,336,436.13</u>	<u>235,947,238.36</u>

The Financial Statements' annotation Published between the page 17 and 92 is the integral part of the financial statements .



Changchun Railway Vehicles Co., Ltd.  
Consolidated Owners' Statement of Retained Earnings

2011

Current - RMB Yuan

Item	The Current of 2011					Minority Shareholders' Rights and Interests	Owner Equity In total
	Attributable to the Company Owner's Equity						
	Paid-in Capital	Capital Reserve	Surplus Public Accumulation	Undistributed Profit	In total		
1. Previous Year Year-end Balance	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61
Plus : Accounting Regulation Adjustments	-	-	-	-	-	-	-
Corrections of Errors and Omissions	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
2. Current Year Beginning Balance	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61
3. Current Year Increase/ Decrease			122,698,790.33	761,795,535.54	884,494,325.87	36,371,152.84	920,865,478.71
(1) Current Year Net Income				1,242,123,382.69	1,242,123,382.69	(12,628,847.16)	1,229,494,535.53
(2) Other Comprehensive income	-	-	-	-	-	-	-
Subtotal of (1)&(2)	-	-	-	1,242,123,382.69	1,242,123,382.69	(12,628,847.16)	1,229,494,535.53
(3)Owner-invested and Decrease Capital	-	-	-	-	-	49,000,000.00	49,000,000.00
①Owner-invested Capital	-	-	-	-	-	49,000,000.00	49,000,000.00
②Payment counted as Owner Capital	-	-	-	-	-	-	-
③Other	-	-	-	-	-	-	-
(4) Earnings Distribution	-	-	122,698,790.33	(480,327,847.15)	(357,629,056.82)	-	(357,629,056.82)
①Surplus Reserve Withdrawals	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Among : legal surplus	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Any Legal Surplus	-	-	-	-	-	-	-
②Owner's Payout				(357,629,056.82)	(357,629,056.82)		(357,629,056.82)
③Other	-	-	-	-	-	-	-
(5) Owner Equity Internal Transfers	-	-	-	-	-	-	-
①Capital Reserve Inbound Transfer	-	-	-	-	-	-	-
②Surplus Reserve Inbound Transfer	-	-	-	-	-	-	-
③Surplus Reserve Deficit Offset	-	-	-	-	-	-	-
④ Other	-	-	-	-	-	-	-
4.Current Year Year-end Balance	2,079,387,600.00	2,489,729,081.80	205,483,379.66	1,350,616,420.18	6,125,216,481.64	66,579,554.68	6,191,796,036.32

The Financial Statements' annotation Published between the page 17 and 22 is the integral part of the financial statements .

Changchun Railway Vehicles Co., Ltd.  
Consolidated Owners' Statement of Retained Earnings  
2010

Current . RMB Yuan

Item	The Current of 2010					Current : RMB Yuan	
	Attributable to the Company Owner's Equity					Minority Shareholders' Rights and Interests	Owner Equity In total
	Paid-in Capital	Capital Reserve	Surplus Public Accumulation	Undistributed Profit	In total		
1. Previous Year Year-end Balance	1,671,976,870.00	1,843,717,191.68	26,773,407.14	184,980,274.36	3,727,447,743.18	6,478,848.22	3,733,926,591.40
Plus : Accounting Regulation Adjustments	-	-	-	-	-	-	-
Corrections of Errors and Omissions	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
2. Current Year Beginning Balance	1,671,976,870.00	1,843,717,191.68	26,773,407.14	184,980,274.36	3,727,447,743.18	6,478,848.22	3,733,926,591.40
3. Current Year Increase/ Decrease	407,410,730.00	646,011,890.12	56,011,182.19	403,840,610.28	1,513,274,412.59	23,729,553.62	1,537,003,966.21
(1) Current Year Net Income	-	-	-	519,788,196.89	519,788,196.89	(16,730,804.82)	503,057,392.07
(2) Other Comprehensive income	-	-	-	-	-	-	-
Subtotal of (1)&(2)	-	-	-	519,788,196.89	519,788,196.89	(16,730,804.82)	503,057,392.07
(3) Decrease Capital	407,410,730.00	646,011,890.12			1,053,422,620.12	40,460,358.44	1,093,882,978.56
①Owner-invested Capital	407,410,730.00	646,011,890.12	-	-	1,053,422,620.12	-	1,053,422,620.12
②Payment counted as Owner Capital	-	-	-	-	-	-	-
③Other	-	-	-	-	-	40,460,358.44	40,460,358.44
(4) Earnings Distribution	-	-	56,011,182.19	(115,947,586.61)	(59,936,404.42)	-	(59,936,404.42)
①Surplus Reserve Withdrawals	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Among : legal surplus	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Any Legal Surplus	-	-	-	-	-	-	-
②Owner's Payout				(59,936,404.42)	(59,936,404.42)		(59,936,404.42)
③Other	-	-	-	-	-	-	-
(5) Owner Equity Internal Transfers	-	-	-	-	-	-	-
①Capital Reserve Inbound Transfer	-	-	-	-	-	-	-
②Surplus Reserve Inbound Transfer	-	-	-	-	-	-	-
③Surplus Reserve Deficit Offset	-	-	-	-	-	-	-
④ Other	-	-	-	-	-	-	-
4.Current Year Year-end Balance	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61

The Financial Statements' annotation Published between the page 17 and 22 is the integral part of the financial statements .



Changchun Railway Vehicles Co., Ltd.  
Consolidated Owners' Statement of Retained Earnings  
2011

Current . RMB Yuan

Item	The Current of 2011					Minority Shareholders' Rights and Interests	Owner Equity In total
	Attributable to the Company Owner's Equity						
	Paid-in Capital	Capital Reserve	Surplus Public Accumulation	Undistributed Profit	In total		
1. Previous Year Year-end Balance	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61
Plus : Accounting Regulation Adjustments	-	-	-	-	-	-	-
Corrections of Errors and Omissions	-	-	-	-	-	-	-
2. Current Year Beginning Balance	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61
3. Current Year Increase/ Decrease			122,698,790.33	746,660,056.15	869,358,846.48	-	869,358,846.48
(1) Current Year Net Income				1,226,987,903.30	1,226,987,903.30	-	1,226,987,903.30
(2) Other Comprehensive income	-	-	-	-	-	-	-
Subtotal of (1)&(2)	-	-	-	1,226,987,903.30	1,226,987,903.30		1,226,987,903.30
(3)Owner-invested and Decrease Capital	-	-	-	-	-	-	-
①Owner-invested Capital	-	-	-	-	-	-	-
②Payment counted as Owner Capital	-	-	-	-	-	-	-
③Other	-	-	-	-	-	-	-
(4) Earnings Distribution	-	-	122,698,790.33	(480,327,847.15)	(357,629,056.82)	-	(357,629,056.82)
①Surplus Reserve Withdrawals	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Among : legal surplus	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Any Legal Surplus	-	-	-	-	-	-	-
②Owner's Payout				(357,629,056.82)	(357,629,056.82)		(357,629,056.82)
③Other	-	-	-	-	-	-	-
(5) Owner Equity Internal Transfers	-	-	-	-	-	-	-
①Capital Reserve Inbound Transfer	-	-	-	-	-	-	-
②Surplus Reserve Inbound Transfer	-	-	-	-	-	-	-
③Surplus Reserve Deficit Offset	-	-	-	-	-	-	-
④ Other	-	-	-	-	-	-	-
4.Current Year Year-end Balance	2,079,387,600.00	2,449,637,374.45	205,483,379.66	1,383,002,167.98	6,117,510,522.09	-	6,117,510,522.09

The Financial Statements' annotation Published between the page 17 and 22 is the integral part of the financial statements .



Changchun Railway Vehicles Co., Ltd.  
Consolidated Owners' Statement of Retained Earnings  
2010

Current . RMB Yuan

Item	The Current of 2010					Minority Shareholders ' Rights and Interests	Owner Equity In total
	Attributable to the Company Owner's Equity						
	Paid-in Capital	Capital Reserve	Surplus Public Accumulation	Undistributed Profit	In total		
1. Previous Year Year-end Balance	1,110,000,000.00	974,108,520.71	26,773,407.14	203,448,418.63	2,314,330,346.48	-	2,314,330,346.48
Plus : Accounting Regulation Adjustments	-	-	-	-	-	-	-
Corrections of Errors and Omissions	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
2. Current Year Beginning Balance	1,110,000,000.00	974,108,520.71	26,773,407.14	203,448,418.63	2,314,330,346.48	-	2,314,330,346.48
3. Current Year Increase/ Decrease	969,387,600.00	1,475,528,853.74	56,011,182.19	432,893,693.20	2,933,821,329.13	-	2,933,821,329.13
(1) Current Year Net Income				560,111,821.91	560,111,821.91	-	560,111,821.91
(2) Other Comprehensive income	-	-	-			-	-
Subtotal of (1)&(2)	-	-	-	560,111,821.91	560,111,821.91	-	560,111,821.91
(3)Owner-invested and Decrease Capital	969,387,600.00	1,475,528,853.74	-	-	2,444,916,453.74	-	2,444,916,453.74
①Capital invested by shareholders	969,387,600.00	1,475,528,853.74	-	-	2,444,916,453.74	-	2,444,916,453.74
②Payment counted as Owner Capital	-	-	-	-	-	-	-
③Other	-	-	-	-	-	-	-
(4) Earnings Distribution	-	-	56,011,182.19	(127,218,128.71)	(71,206,946.52)	-	(71,206,946.52)
①Surplus Reserve Withdrawals	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Among : legal surplus	-	-	56,011,182.19	(56,011,182.19)	-	-	-
Any Legal Surplus	-	-	-	-	-	-	-
②Owner's Payout				(71,206,946.52)	(71,206,946.52)		-
③Other	-	-	-	-	-	-	-
(5) Owner Equity Internal Transfers	-	-	-	-	-	-	-
①Capital Reserve Inbound Transfer	-	-	-	-	-	-	-
②Surplus Reserve Inbound Transfer	-	-	-	-	-	-	-
③Surplus Reserve Deficit Offset	-	-	-	-	-	-	-
④ Other	-	-	-	-	-	-	-
4.Current Year Year-end Balance	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61

The Financial Statements' annotation Published between the page 17 and 16 is the integral part of the financial statements .

# **Changchun Railway Vehicles Co., Ltd.**

## **Notes to Financial Statements**

Up to Dec. 31, 2011

(The monetary unit of the Notes is RMB yuan)

### **1. Brief introduction to the Company**

CNR Changchun Railway Vehicles Co., Ltd. (hereinafter referred to as "the Company") is a limited liability company founded in Changchun, Jilin Province, in March 2002 under the approval of the State Economic and Trade Commission (the Approval No.: G.J.M.Q.G. [2002] No. 136), and handled the industrial and Commercial registration procedures in Industrial and Commercial Administration of Changchun City and got the Business License of Enterprise Legal Person (Registered No.:2200001009604) issued by Industrial and Commercial Administration of Changchun City on March 18, 2002. The operation period of the Company is 20 years since the date of the founding of the Company, with the registered capital of RMB 530 million yuan.

The Company is a company limited by shares established by means of promotion with China Northern Locomotive and Rolling Stock Industry (Group) Corporation (hereinafter referred to as "Group Company") as the main promoter. The Group Company invested in the Company with its subordinate and railway vehicles and urban mass transit vehicles manufacturing (Main Business) related business assets and liabilities ("Net Assets"), the above net assets was assessed by China Assets Appraisal Co., Ltd., the appraised net assets is RMB 595,440,200.00 yuan. After approved by Ministry of Finance with Ministry of Finance's Reply on Issues Related to Changchun Railway Vehicles Co., Ltd. (Preparation) State-owned Stock Rights Management, the net assets invested by the Group Company in the Company is converted into the Company's capital stock of 390,602,230.00 shares in the proportion of 65.6%, with par value of RMB 1.00 yuan/ share.

Other promoters contributed with cash, totally paid RMB 212,500,000.00 yuan, which is converted into the Company's capital stock of 139,397,700.00 shares in the proportion of 65.6%.

After approved by Commission of the State-Owned Assets Supervision and Administration (hereinafter referred to as "the State Assets Commission") with Reply on the Overall Reorganization and Getting Listed Domestically of China Northern Locomotive and Rolling Stock Industry (Group) Corporation (G.Z.G.G[2008] No. 294), the Group Company combined with other promoters to establish China CNR Corporation Limited (hereinafter referred to as "Corporation Limited" with the stock rights of 20 wholly-owned or holding subsidiaries including the Company and the related assets of the Group Company's Headquarter, with the after-appraisal value added part of cash with Dec. 31, 2007 as the appraisal benchmark. In accordance with the Restructuring Agreement signed between the Group Company and the Corporation Limited, the Group Company will transfer all its stock rights (the Company's 73.7% of the stock rights) to the Corporation Limited. The Company changed the company's articles of association on Aug. 27, 2008, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Aug. 29, 2008.



# 1. Brief introduction to the Company (Continued)

In accordance with the resolution of the shareholders' Meeting on Sep. 17, 2008, the Company decided to increase the registered capital from RMB 530 million yuan to 1.11 billion yuan. The increased registered capital is subscribed by the new stockholders Changchun Railway Vehicle Equipment Co., Ltd. (hereinafter referred to as "CR Equipment") and CNR Changchun Railway Vehicles Group Co., Ltd. (hereinafter referred to as "CRC Group"). Among them, CR Equipment contributed RMB 829,415,165.24 yuan in the forms of monetary capital, physical assets and land use right, subscribed 404,310,656 shares; CRC Group contributed RMB 360,414,459.03 yuan in the form of monetary capital, subscribed 175,689,344 shares. Jilin Guangda Certified Public Accountants Firm made the verification on the paid-up of the newly added registered capital on Dec. 10, 2008, and issued J.G.Y.Zi.[2008]No. 1252 Capital Verification Report. The Company changed the company's articles of association on Dec. 19, 2008, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Dec. 31, 2008.

In accordance with the resolution of the shareholders' Meeting on Sep. 14, 2010, the Company's parent company- China CNR Corporation Limited (hereinafter referred to as CNR Corporation) added capital of RMB 1.032 billion yuan to the Company by means of capital raising investment fund, and CRC Group-the Company planed to absorb and merge the CNR Corporation's subsidiary, after absorption and merger, CRC Group will cancel its legal person's qualification, the formerly held all assets and liabilities will merge into the Company, and the credits and debts and business will also be inherited by the Company. This capital increase and the converted share price of merger are based on the estimated value of the net asset per share of the Company with Dec. 31, 2009 as the benchmark. In accordance with the Assets Evaluation Report of CNR Changchun Railway Vehicles Co., Ltd. on Project of Raising Capital for Increasing Capital and Absorption and Merger CNR Changchun Railway Vehicles Group Co., Ltd. (Z.Z.P.B.Zi. [2010] No. 78) issued by China Assets Appraisal Co., Ltd. on Jun. 25, 2010, the net assets on the benchmark is RMB 2.533 yuan. CNR Corporation's raising capital investment fund as per the above converted stock price, newly added the Company's common stock 407,410,730 shares. CNR Corporation used CRC Group's net assets evaluation value on Dec. 31, 2009 as per the above converted stock price, newly added the Company's common stock 737,666,214 shares, meanwhile cancel the Company's common stock 175,689,344 shares originally held by CRC Group. After this capital increasing and absorption and merger, Changchun Zhongfan Certified Public Accountants Firm Co., Ltd. made the Capital Verification of Alteration on Nov. 5, 2010, and issued the C.Z.F.Y.Zi. [2010] No. 155 Capital Verification Report. The Company altered the Company's Articles of Association, and got the new Business License of Enterprise Legal Person (Registered No.:220000000093577) issued by Industrial and Commercial Administration of Jilin Province on Nov. 8, 2010.

The Company and its subsidiaries (hereinafter referred to as "the Group") mainly engage in the design, manufacturing, marketing, leasing and of railway vehicles, EMUs, urban mass transit vehicles and accessories, and technical services, technical consultation in relevant fields; operate the self-made products of the Group and the export business of the relevant products and technology, etc.



## 2. Preparation basis of Financial Statements

### (1) Statement of Abiding by Accounting Standards for Business Enterprises

The Financial Statements is in conformity with the requirements of Accounting Standards for Business Enterprises—basic standard and 38 detailed accounting standards, and later issued Application Guide of Accounting Standards for Business Enterprises, Explanation and other relevant provisions of Accounting Standards for Business Enterprises (hereinafter collectively referred to as "Accounting Standards for Business Enterprises") issued by Ministry of Finance of the People's Republic of China (hereinafter referred to as "Ministry of Finance" on Feb. 15, 2006, which reflect the relevant information of the Company's combination financial situation on Dec. 31, 2011, and financial status, consolidated business performance and business performance, as well as consolidated cash flow and cash flow of the year 2011 truly and completely.

### (2) Fiscal year

The fiscal year of the Group is the Western calendar, i.e. from Jan 1 to Dec. 31 each year.

### (3) Measurement attribute

Use historical cost to measure when preparing the Financial Statements

### (4) Currency of keeping accounts and presentation currency

The Company's currency of keeping accounts is RMB. The currency for preparing Financial Statements is RMB. The basis for the Company and its subsidiaries to choose currency of keeping accounts is the main business income's valuation and settlement currency.

## 3. Main accounting policies and main accounting estimates

### (1) Consolidated financial statements

The consolidated scope of consolidated financial statements is determined on the basis of control, including the Company and the subsidiaries controlled by the Company. Control refers to have the right to decide a company's financial and operation policies, and accordingly to get benefits from the operation activities of the Company. The subsidiaries' financial status, business performance and cash flow are included in the consolidated financial statements from the starting date of control to the ending date of control.

The equity and profit and loss that shall be possessed by the subsidiaries' minority stockholders are listed separately on the owner's equity of the consolidated balance sheet and after the net profits item of the consolidated income statements.

If the current losses shared by the subsidiaries' minority stockholders exceed the shares that the minority stockholders shared in the Company's opening owner's equity, the balance still reduce the minority stockholders' equity.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (1) Consolidated financial statements (Continued)

When the accounting period or the accounting policies of the subsidiaries are not in conformity with the Company, necessary adjustment has been made in accordance with the Company's accounting period or the accounting policies upon consolidation. All material transactions in the Group, including unrealized profits and intercompany balances are eliminated upon consolidation. The unrealized losses occurred in the Group, if there are evidences that the losses are relevant assets impairment losses, the losses shall be recognized in full amount.

#### (2) Foreign currency translation

When the Group receives the capital invested by the Investors in foreign currency, it shall be converted into RMB as per the spot exchange rate on the transaction date. Other foreign currency transactions shall be converted into RMB upon initial recognition, as per the spot exchange rate or the approximate exchange rate on the transaction date.

The spot exchange rate refers to RMB foreign exchange rate issued by the People's Bank of China, foreign exchange rates issued by State Administration of Foreign Exchange or the cross rates in accordance with the issued foreign exchange rates. The approximate exchange rate of the spot exchange rate is the weighted average exchange rate similar to spot exchange rate of the transaction date decided as per the systematic and reasonable method.

The year-end foreign currency monetary items are converted as per the spot exchange rate on the date of the balance sheet. Except for the exchange balance between the special borrowing principals and interests relating to the acquisition and construction of assets meet the capitalization conditions (see Note 3(16)), other exchange rate balance are recorded as current profits and losses. The foreign currency non-monetary items measured in historical cost shall not change its currency of keeping accounts amount.

#### (3) Cash and cash equivalents

Cash and cash equivalents include the inventory cash and the deposit can be payable at any time, as well as the short-term, highly liquid investments that are readily convertible into known amounts of cash and that are subject to an insignificant risk of change in value.

#### (4) Inventories

The inventory is made initial measurement as per the cost. The inventory costs includes purchasing costs, processing costs and other expenditures occurred to make the inventory to reach the current location and status. The actual costs of the sent inventory are measured as per moving weighted average method. Apart from the raw material purchasing costs, the goods-in-process and finished products also include the direct labor and the production manufacturing costs allocated in accordance with proper proportion.

Balance sheet date, inventory is measured as per the less one of the costs and net realizable value.

The balance that the cost calculated as per single inventory items is higher than its net realizable value, is recorded into the inventories falling price loss. Net realizable value refers to the amount that the evaluated sales price of the inventory deduct the estimated cost to happen when completion of work, the estimated sales expenses and related tax fees.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (5) Long-term equity investment

##### (a) Investment on the subsidiaries

In the consolidated financial statements of the Group, the long-term equity investment on the subsidiaries are treated as per the Note 3 (1).

In the individual financial statements of the Company, the investment cost on the long-term equity investment on the subsidiaries is made initial measurement as per the following principles:

- the long-term equity investment on the subsidiaries formed in the merger under different control, the enterprise merger belongs to several transactions and realization by steps, the Company uses the book value of the merged party's equity investment before the date of merger, plus the new added investment costs on the date of merger as the initial investment cost of the investment; For other enterprise consolidation, the Company uses the assets paid for getting the control right of the merged party and fair value of liabilities occurred or borne as initial investment cost of the investment on the merged date.

- Besides the long-term equity investments on the subsidiaries formed by the merger of enterprises, when making initial recognition, it shall be recognized in accordance with the principles of Note 3(5) b.

In individual financial statements, the Company uses cost method to make subsequent measurement on the long-term equity investments on the subsidiaries, except for the actually paid price when investment or the announced but undistributed cash dividends or profits included in the consideration, the Company recognizes investment income in accordance with the cash dividends or profits delivered by the invested unit that the Company enjoys, without dividing them into the net profits realized by the invested unit before investment or after investment. And listed on the balance sheet at the end period as per the cost deducts the depreciation reserves (Note 3 (10) (c)).

##### (b) Investments on the joint enterprises

Joint enterprises refer to the enterprises that the Group and other investment parties control on it together in accordance with the Contract arrangement.

When getting the investments on the joint enterprises, the Group's principles to recognize the initial investment are: for the long-term equity investment obtained by paying cash, the Group takes the actually paid purchased price as the initial investment cost; for the long-term equity investment invested by the investors, the Group takes the value as the initial investment cost provided in the investment contract or agreement.

When making consequent measurement, the long-term equity investments on the joint enterprises use equity method to measure.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (5) Long-term equity investment (Continued)

##### (b) Investments on the joint enterprises (Continued)

When using equity method to measure, the Group's detailed accounting treatments include:

- If the initial cost of a long-term equity investment is more than the investing enterprise' attributable share of the fair value of the invested entity's identifiable net assets for the investment, the former is taken as the cost of the long-term equity investment; If the initial cost of a long-term equity investment is less than the investing enterprise' attributable share of the fair value of the invested entity's identifiable net assets for the investment, the later is taken as the cost of the long-term equity investment, the difference between the long-term equity investment and the initial investment cost shall be included in the current profits and losses.
- After getting the investment on the joint enterprises, the Group shall, in accordance with the attributable share of the net profits or losses of the invested entity, deduct the already held investment on the joint enterprise before the Group's initial carrying out the Accounting Standards for Business Enterprises, the equity investment debit balance that recognized in accordance with the original Accounting Standards and Systems, recognize the investment profits or losses and adjust the book value of the long-term equity investment; in the light of the profits or cash dividends declared to distribute by the invested entity, calculate the proportion it shall obtain, and shall reduce the book value of the long-term equity investment correspondingly.
- When calculating the attributable share of the net profits or losses of the invested entity, the Group takes the fair value of the recognizable assets of the invested entity when getting investment, and recognizes after making necessary adjustment in accordance with the Group's accounting policies and accounting period. The unrealized profits and losses arising from the internal transaction between the Group and the joint enterprise, the part that attributed to the Group as per the stock holding proportion, shall be written off when making equity method accounting. The unrealized losses arising from internal transaction, if there are evidences showing the losses are the impairment of relevant assets, the losses shall be recognized in full amount.
- For the net losses of the joint enterprises, the Group shall, recognize the net losses of the invested enterprise until the book value of the long-term equity investment and other long-term rights and interests which substantially form the net investment made to the joint enterprises are reduced to zero, unless the Group has the obligation to undertake extra losses. If the joint enterprises realize any net profits later, the Group shall, after the amount of its attributable share of profits offsets against its attributable share of the un-recognized losses, resume to recognize its attributable share of profits.
- Where any change is made to the owner's equity other than the net profits and losses of the joint enterprises, the book value of the long-term equity investment shall be adjusted and be included in the owner's equity by the Group.

At the end of the accounting period, the Group shall make depreciation reserves for the long-term equity investment in accordance with the principles of Note 3 (10) (c).

3. Main accounting policies and main accounting estimates (Continued)

(5) Long-term equity investment (Continued)

(c) Other long-term equity investments

Other long-term equity investment refer to the investment that the invested enterprises haven't the long-term equity investments that have control, joint control, major influence, and haven't offer in the active market, and of which the fair value is unable to be measured reliably.

The Group recognizes the initial investment costs of the investment in accordance with the above initial cost recognition and measurement principles on the joint enterprises, and use cost method (see Notes 3(5) (b)) to make consequent measurement. At the end of the accounting period, other long-term equity investments make depreciation reserves in accordance with the principles of Note 3 (10) (b).

(6) Fixed assets and construction in process

Fixed assets refer to the tangible assets held by the Group for manufacturing goods, offering labor service, rent or operational management, with its service life exceeding one fisical year.

Fixed assets are listed in the balance sheet as cost deduct accumulated depreciation and depreciation reserves (see Note 3 (10) (c)). Construction in process is listed in the balance sheet as cost deduct depreciation reserves (see Note 3 (10) (c)).

The initial cost of a purchased fixed asset consists of the purchase price, the relevant taxes, and expenses that bring the fixed asset to the expected conditions for use and that may be relegated to the fixed asset. The initial cost of a self-built fixed asset consists of goods and materials, direct labor, borrowing expenses meet the capitalization conditions (see Note 3(16)) and the necessary expenses that bring the asset to the expected conditions for use.

When it reaches the expected conditions for use, the construction in process will transfer into fixed asset. The construction in process shall not be made depreciation.

The components of a fixed asset have different useful lives or bring economic benefits for the Group in different ways and to which different depreciation rates or depreciation methods apply, and they shall be recognized as fixed assets on an individual component basis by the Group.

If the subsequent expenses related to a fixed asset, including the relevant expenses of changing some parts of the fixed asset, when they meet the recognition conditions of fixed asset, they shall be included in the cost of fixed asset, meanwhile the book value of the replaced parts is deducted; the expenses related to the daily maintenance of the fixed assets shall be included in the current profits and losses.

The profits and losses occurred when discarding or disposal of fixed assets are the difference between the net amount gained in disposal and the book amount of the item, and are recognized in the profits and losses on the date of the discard or disposal.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (6) Fixed assets and construction in process

The Group adopts annual average method to accrue depreciation of fixed assets during the service life, the service life and estimated net residual value, and depreciation rate of fixed assets are as follows:

	<u>Service life</u>	<u>Estimated net residual rate</u>	<u>Annual depreciation rate</u>
Houses and buildings	30 years	3%-5%	3.17-3.23%
Machinery and equipments	5-18 years	3%-5%	5.28-19.40%
Office equipments and others	5 years	3%-5%	19.00-19.40%
Transport facility	6 years	3%-5%	15.83-16.17%

The Group re-checks the service life of fixed assets, the estimated net residual value and depreciation method at least at the end of each year.

#### (7) Financial leasing

Leasing includes financial leasing and operating leasing. Financial leasing refers to the leasing no matter the ownership finally transferred or not, but in essence, all risks and remuneration relating to assets ownership has transferred. Operating leasing refers to other leasings except for financial leasing.

##### (a) Rented assets by financial leasing

On the date of leasing, the Group's financial leasing assets takes the less one of the fair value of the leasing assets and the current value of the minimum leasing payment amount on the starting date of leasing as the entry value of the leasing assets, and takes the minimum leasing payment amount as the entry value of the long-term account payable, and its balance is recognized as unrecognized financial costs. The Group takes the initial direct costs of the financial leasing to enter the rented assets value. Rented assets by financial leasing is to accrue depreciation in accordance with the depreciation policies stated in Note 3(6), and to accrue depreciation reserves in accordance with accounting policies stated in Note 3 (10) (c).

Where the rented assets ownership can be reasonably decided to obtain when the leasing period expires, the rented assets are accrued depreciation during the service life. Otherwise, it takes the less one of the leasing period of the leasing assets and the service life of the leasing assets to accrue depreciation. The Group adopts actual interest rate to amortize the unrecognized financial costs within the different periods of leasing, and treats as per the borrowing costs principle (See Note 3(16)).

On the date of balance sheet, the Group will list the balance that the financial leasing related long-term accounts payable deduct unrecognized financial costs, as long-term liabilities and long-term liabilities are due within one year.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (7) Leasing (Continued)

##### (b) Rented assets by operating leasing

The rent cost of the rented assets by operating leasing is recognized as related assets costs or expenses in accordance with direct line method during the leasing period.

#### (8) Intangible assets

Intangible assets are listed on the balance sheet as costs or evaluated value deduct accumulated amortization (only limited to the intangible assets with limited service life) and depreciation reserves (see Note 3(10) (c)).

For the intangible assets with limited service life, the Group amortizes them in the estimated service life by the straight-line method after the costs or evaluated value of intangible assets deducts the residue value and depreciation reserves. The amortization years of period for each intangible assets are as follows:

#### Amortization years of period

Land use right	50 years
Non-patent technology	5-10
years	
Others	3-10 years

The Group deems the intangible assets that unable to anticipate the future economic benefits period as intangible assets with uncertain service life, and this type of intangible assets are not to be amortized. Up to the date of the balance sheet, the Group hasn't intangible assets with uncertain service life.

The expenditures for R & D projects within the Group are divided into research stage expenditures and development stage expenditures. The research stage expenditures are entered into the current profits and losses upon happen. The development stage expenditures, if a certain product or work process formed by development are feasible in technology or commerce, and the Group has sufficient resources and intention to finish the development work, and the development stage expenditures can be reliably measured, the development stage expenditures will be capitalized. The capitalized development expenditures are listed on the balance sheet as the costs deduct depreciation reserves (See Note 3(10) (c)). Other development expenses are recognized as expenses during the development period.

#### (9) Financial instruments

The financial instruments of the Group include monetary capital, accounts receivable, accounts payable, borrowing costs and paid-in capital, etc.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

##### (a) Recognition of measurement of financial assets and financial liabilities

When financial asset and financial liability in the Group becomes a party to a financial instrument contract clause, it shall recognize in balance sheet.

The Group divides the financial assets and financial liabilities into different types in accordance with the purpose of obtaining assets and bearing liabilities: financial asset and financial liability, loans and account receivable and other financial liabilities that are measured at fair value and their changes are recorded into the current profits and losses.

The financial assets and financial liabilities initially recognized shall be measured at their fair values. For the financial assets and liabilities measured at their fair values and of which the variation is recorded into the profits and losses of the current period, the transaction expenses thereof shall be directly recorded into the profits and losses of the current period; for other categories of financial assets and financial liabilities, the transaction expenses thereof shall be included into the initially recognized amount. After initial recognition, the consequent measurements of the financial assets and financial liabilities are as follows:

- The financial assets and financial liabilities that are measured at the fair value and their changes are recorded into the profits and losses of the current period. (including transactional financial assets and financial liabilities)
- After initial recognition, the financial assets and financial liabilities that are measured at the fair value and their changes are recorded into the profits and losses of the current period are measure at the fair value, the profits and losses formed by the fair value changes are recorded into the profits and losses of the current period.

##### - Accounts receivable

Accounts receivable refers to the non-derivative financial asset without offer in the active market, with fixed recoverable or decidable amount.

After initial recognition, the accounts receivable shall be measured with the actual interest rate method at the amortized cost.

##### - Other financial liabilities

Other financial liabilities refer to the financial liabilities except the financial liabilities that are measured at the fair value and their changes are recorded into the current profits and losses.

Other financial liabilities of the Group, after initial recognition, shall be measured with the actual interest rate method at the amortized cost.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

(b) The presentation of offsetting of financial assets and financial liabilities

The financial assets and financial liabilities are presented in the balance sheet respectively, without offsetting each other. However, if the following conditions are met at the same time, the net amount after offsetting shall be presented in the balance sheet:

- The Group has the statutory right to offset the recognized amount, and this statutory right is executable;
- The Group plans to settle at the net amount, or realize the financial asset and pay off the financial liabilities at the same time.

(c) Confirmation of the fair value

The Group uses the offer in the active market to confirm the fair values of the financial assets and financial liabilities if it has active markets. If the financial instruments haven't active market, uses the valuation technique to confirm the fair value. The valuation methods used include referring to the transaction price of market transactions made in recently by each party that familiar to the situation and transact of their own will and referring to the current market offer of the other financial instruments of the same essence. The Group evaluates the valuation methods periodically and tests their effectiveness.

(d) Terminate recognition of the financial assets and financial liabilities

When the contract rights of cash flow that receiving a certain financial asset terminated or all risks and remuneration has transferred, the Group terminates to recognize the financial asset. If the transfer of an entire financial asset satisfies the conditions for stopping recognition, the difference between the amounts of the following 2 items shall be recorded in the profits and losses of the current period by the Group:

- The book value of the transferred financial asset;
- The sum of consideration received from the transfer, and the accumulative amount of the changes of the fair value originally recorded in the owner's equities.

Where the current obligations of the financial liabilities have fully or partially rescinded, the Group stops to confirm the financial liabilities or part of the liabilities.



3. Main accounting policies and main accounting estimates  
(Continued)

(10) Provision for the impairment of assets

Except for the impairment of assets related in Note 3(4), other impairments are treated as the following principles:

(a) Impairment of financial assets

The Group checks the book value of financial assets on the date of balance sheet, except for the financial assets measured at their fair values and of which the variation is recorded into the profits and losses of the current period, there are objective evidence to show that the financial asset has impairment, a provision for the asset impairment shall be made.

- Accounts receivable

The accounts receivable use individual way and combination way to evaluate the impairment loss.

When using individual way to evaluate, when the current value of the estimated future cash flow of the accounts receivable (excluding the unhappened future credit loss) converted in the original actual interest rate is lower than its book value, the Group will write down the book value of the accounts receivable to the current value, the write down amount is recognized as asset impairment loss and recorded into the current profits and losses.

When using combination way to evaluated the impairment loss of accounts receivable, the amount of impairment loss is adjusted and recognized in accordance with the previous loss experiences of the accounts receivable with similar credit risks features (including accounts receivable that not happened impairment evaluated in the individual way), and also the observable data that reflects the current economic situation.

After the accounts receivable recognized impairment loss, if there are objective evidences showing that the financial asset value has recovered, and objectively are related to the matters occurred after recognized the loss, the Group shall reverse the originally recognized impairment loss, and record into the current profits and losses. The switched back value shall not exceed the amortized cost on the switched back date, suppose under the circumstances of no provisions for impairment.

(b) Impairment of other long-term equity investments

Other long-term equity investments (see Note 3(5) (c)) use individual way to evaluate impairment loss.

When other long-term equity investments has impairment, the Group shall recognize the balance as the impairment loss between the book value of other long-term equity investments and the current value that confirmed by the current market return against the future discounted cash flow in accordance with the similar financial assets, and record into the current profits and losses. And the impairment loss will not be switched back.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) Provision for the impairment of assets (Continued)

##### (c) Impairment of other assets

The Group, on the date of balance sheet, in accordance with the internal and external information, determines whether the following assets have signs of impairment, include:

- Fixed assets
- Projects in process
- Intangible assets
- Long-term equity investments on subsidiaries and joint companies, etc.

The Group makes impairment test on the assets with impairment signs, and evaluate the recoverable amount of the assets.

The assets group is the minimum assets combination that can be recognized, the cash flow it produced is basically independent from other assets or assets group. The assets group is made up of the related assets that create the cash flow. When recognizing an asset group, it shall take into consideration whether the asset group to create independent cash flow, simultaneously, how the managements manage the production and business activities, and the ways of decision-making for the use or disposal of the assets, etc.

The recoverable amount refers to assets (or an asset group, combination of asset group, similarly hereinafter) determined on the basis of the higher one of the net amount of the fair value of the asset minus the disposal expenses and the current value of the expected future cash flow of the asset.

The net amount of the fair value of an asset minus the disposal expenses shall be determined in light of the amount of the basis of the price as stipulated in the sales agreement in the fair transaction minus the disposal expenses directly attributable to the asset. The current value of the expected future cash flow of an asset shall be determined by the discounted cash with an appropriate pre-tax discount rate, on the basis of the expected future cash flow generated during the continuous use or final disposal of an asset.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) Provision for the impairment of assets (Continued)

##### (c) Impairment of other assets (Continued)

Where the measurement result of the recoverable amount indicates that an asset's recoverable amount is lower than its carrying value, the carrying value of the asset shall be recorded down to the recoverable amount, and the reduced amount shall be recognized as the loss of asset impairment and be recorded as the profit or loss for the current period. Simultaneously, a provision for the asset impairment shall be made accordingly. The impairment loss related to asset group or combination of asset group shall first charge against the carrying value of the headquarter's assets and business reputation which are apportioned to the asset group or combination of asset groups, then charge it against the carrying value of other assets in proportion to the weight of other assets in the asset group or combination of asset groups with the business reputation excluded. However, the carrying value of each asset after charging against shall not be lower than the highest one of the following three: the net amount of the fair value of the asset minus the disposal expenses (if determinable), the current value of the expected future cash flow of the asset (if determinable), and zero.

Once the assets depreciation loss is recognized, they shall not be switched back in the future accounting period.

#### (11) Employee Compensation

The term "employee compensation" refers to all kinds of payments and other relevant expenditures given by the Group in exchange of the services offered by the employees. Except for compensation due to dismissing of employee, during the accounting period of an employee providing services to the Group, the Group views the compensation payable as liabilities, and increase assets cost or the current expenses correspondingly.

##### (a) Social insurance welfare and the housing accumulation fund

In accordance with the laws and regulations of the state, the Group employees participated in the social security system set up by the governmental organizations. In accordance with the benchmark and proportion, the Group paid the basic endowment insurance, basic medical insurance, unemployment insurance, work injury insurance, maternity insurance and other social insurances and housing accumulation fund for the employees. The above paid social insurance and housing accumulation fund shall be recorded as assets cost or profit or loss for the current period on the accrual basis principle. The Group shall not have other payment obligations after paying the above amount in accordance with the standards stipulated by the state periodically.

In addition, the Group also provides compensation retirement welfare to the employees retired on Dec. 31, 2007 or before. The Group's employees retired after Dec. 31, 2007, will not enjoy the compensation retirement welfare. The Group's responsibilities on compensation retirement welfare is calculated by amount estimated the Group's promise to the employee in the actuarial way to pay their future welfare after retirement. This welfare uses discount rate discounting to determine the current value. The discount rate is with reference due date, the yield of the Chinese national bond similar to the Group's responsibilities period on the date of balance sheet. When calculating the Group's responsibilities, any part that exceed 10% of the current responsibilities value totally, are amortized during the welfare plan future expected life. Otherwise the actual yield or loss shall not be recognized.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (11) Employee Compensation (Continued)

##### (b) Early retirement welfare

When the early retirement plan meets the following conditions, it shall be recorded as estimated liabilities, and recorded as the current profit and loss:

- The Group has formulated formal early retirement plan and is going to put into practice;
- The Group cannot withdraw the plan or agreement unilaterally.

#### (12) Income Taxes

Except that income taxes influence related to the transactions or events directly recorded in the owner's equity shall be recorded into the owner's rights and interests by the Group, the income taxes of the current period and deferred income taxes expenses (incomes) are recorded into the current profits and losses.

The current income tax is adjusted in accordance with taxable income of the year, the expected payable amount of income taxes calculated according to the tax law, plus the income tax payable of the previous year.

On the date of balance sheet, if the Group has the statutory rights to settle in net amount, and is intended to settle in net amount or obtain assets and liquidate liabilities simultaneously, the current income tax assets and liabilities are listed in the deducted net amount.

The deferred income tax assets and liabilities are determined in light of the deductible temporary difference and tax payable temporary difference. The temporary difference refers to the difference between the book value of the assets or liabilities and the taxation basis, including the losses deductible and tax deduction that can be carry forward the future years. The recognition of deferred income tax assets takes the taxable income amount as the limit that is likely to obtain to offset the deductible temporary difference.

If it is not enterprise combination transaction and when transaction occurs, it affect neither accounting profits nor the taxable income amount (or deductible losses), the temporary difference in the transaction will not produce deferred income tax. The temporary difference resulted from initial recognition of goodwill would not produce the relevant deferred income tax.

On the balance sheet date, the Group measures the book value of the deferred income tax assets and liabilities in light of the expected recover or settle ways, in accordance the provisions of the issued tax law, as per the tax rate applicable to the period during which the assets are expected to be recovered or the liabilities are expected to be settled.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (12) Income Taxes (Continued)

The Group shall re-examine the book value of deferred income tax assets on the balance sheet date. If it is unlikely to obtain sufficient taxable income taxes to offset the benefit of the deferred income tax assets, the book value of the deferred income tax assets shall be written down. When it is probable to obtain sufficient taxable income taxes, such write-down amount shall be subsequently reversed.

On the date of balance sheet, the deferred income tax assets and liabilities are presented in the in the deducted net amount when meeting the following conditions simultaneously:

- The taxpayer has the statutory rights to settle the current income tax assets and liabilities in net amount;
- And the deferred income tax assets and the liabilities are related to the tax income levied by the same tax levying department on the same taxpayer or related to different taxpayers, but during every deferred income tax asset or liability reversed period of significance, the taxpayers concerned are intended to settle the current income tax assets and liabilities in net amount or obtain assets, liquidate liabilities simultaneously.

#### (13) Estimated debts and contingent debts

If the obligation pertinent to contingencies is a current obligation of the Group, and it is likely to cause any economic benefit to flow out of the Group as a result of performance of the obligation, and the relevant amount can be measured in a reliable ways, the Group shall recognize them as estimated debts. The estimated debts that greatly affect the monetary time value shall be determined in the amount after estimated future cash flow discount.

A potential obligation caused by past transactions or events and whose existence will be confirmed only by the occurrence or non-occurrence of uncertain future events; or a current obligation caused by a past transaction or event but is not recognized because the performance of the obligation is not likely to incur an outflow of economic benefits from the Group or because the amount of the obligation cannot be measured in a reliable way, the Group shall disclose the potential obligation or current obligation as contingent debts.

#### (14) Revenue recognition

The revenue refers to the gross inflow of economic benefits formed during the course of the ordinary activities of the Group, which may increase the owner's equities and is irrelevant to the invested capital of the owner. When the amount and the relevant costs of the revenue can be measured in a reliable way, the relevant economic benefits may flow into the Group, and the following recognition conditions of different types of revenues are met simultaneously, the revenue are recognized.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (14) Revenue recognition (Continued)

##### (a) Revenue from selling goods

When the above mentioned revenue general recognition conditions and the following conditions are met simultaneously, the Group recognizes the revenue from selling goods:

- The significant risks and rewards of ownership of the goods have been transferred to the Buyer by the Group;
  - The enterprise retains neither continuous management right that usually keeps relation with the ownership nor effective control over the sold goods;
- The Group shall ascertain the revenue incurred by selling goods in accordance with the fair value of received or receivable price stipulated in the contract or agreement signed between the Group and the buyer.

##### (b) Revenue from Providing Labor Services

The Group shall ascertain the revenue from providing labor services in accordance with the fair value of received or receivable price stipulated in the contract or agreement signed between the Group and the buyer.

On the date of the balance sheet, reliably estimate the outcome of a transaction concerning the labor services it provides, it shall recognize the revenue from providing services employing the percentage-of-completion method. The schedule of completion under the transaction concerning the providing of labor services, are ascertained in accordance with the proportion of the costs incurred against the estimated total costs. If an enterprise can not, on the date of the balance sheet, measure the result of a transaction concerning the providing of labor, If the cost of labor services incurred is expected to be compensated, the revenue from the providing of labor services shall be recognized in accordance with the amount of the cost of labor services incurred, and the cost of labor services shall be carried forward at the same amount; If the cost of labor services incurred is not expected to compensate, the cost incurred should be included in the current profits and losses, and no revenue from the providing of labor services may be recognized.

(c) Interest revenue should be measured and confirmed in accordance with the length of time for the monetary capital borrowed from the Group is used by others and the actual interest rate.

#### (15) Government subsidies

A government subsidy means the monetary or non-monetary assets obtained free by the group from the government, but excluding the capital invested by the government as the investor to the Group. Among the investment subsidies and other special allocations, those are treated as capital reserve in accordance with the provisions of the relevant documents of the state, also belong to the capital invested nature, and do not belong to government subsidies.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (15) Government subsidies (Continued)

The government subsidies shall not be recognized until they can meet the conditions for the government subsidies; and can obtain the government subsidies.\*

If a government subsidy is a monetary asset, it shall be measured in the light of the received or receivable amount. If a government subsidy is a non-monetary asset, it shall be measured at its fair value.

The government subsidies pertinent to assets shall be recognized as deferred income by the Group, and equally distributed within the useful lives of the relevant assets, and included in the current profits and losses. The government subsidies pertinent to incomes if used for compensating the related future expenses or losses of the enterprise shall be recognized as deferred income by the Group and shall be included in the current profits and losses during the period when the relevant expenses are recognized; if used for compensating the related expenses or losses incurred to the Group shall be directly included in the current profits and losses.

#### (16) Borrowing costs

Where the borrowing costs incurred to the Group can be directly attributable to the acquisition and construction of assets eligible for capitalization, it shall be capitalized and recorded into the costs of relevant assets. Other borrowing costs shall be recognized as expenses on the basis of the actual amount incurred, and shall be recorded into the current profits and losses. During the period of capitalization, the to-be-capitalized amount of interests (including the amortization of discounts or premiums) in each accounting period shall be determined according to the following provisions:

- As for specifically borrowed loans for the acquisition and construction of assets eligible for capitalization, the to-be-capitalized amount of interests shall be determined by the Group in light of the actual cost incurred of the specially borrowed loan at the present period minus the income of interests earned on the unused borrowing loans as a deposit in the bank or as a temporary investment. Where a general borrowing is used for the acquisition and construction of assets eligible for capitalization, the Group shall calculate and determine the to-be-capitalized amount of interests on the general borrowing by multiplying the weighted average asset disbursement of the part of the accumulative asset disbursements minus the general borrowing by the capitalization rate of the general borrowing used. The capitalization rate shall be calculated and determined in light of the weighted average interest rate of the general borrowing.

When the Group determines the actual interest rate of the borrowings, it discounts the borrowings of the future cash flow during the estimated continuous period or the applied shorter period into the interest rate used when the borrowings initially recognized amount.

During the period of capitalization, the exchange balance on principle and interest of special foreign currency borrowings shall be capitalized, and shall be recorded into the cost of assets eligible for capitalization. Except for the special foreign currency borrowings, the exchange balance on principle and interest of other foreign currency borrowings shall be capitalized as financial costs are recorded into the profits and losses of the current period.

3. Main accounting policies and main accounting estimates (Continued)  
(16) Borrowing costs (Continued)

The capitalization period shall refer to the period from the commencement to the cessation of capitalization of the borrowing costs, excluding the period of suspension of capitalization of the borrowing costs. When assets expenditure and the borrowing costs have occurred and the necessary acquisition and construction or production activities have started to make the assets to be ready for the intended use or sale, the borrowing costs start capitalization. When the qualified asset under acquisition and construction or production is ready for the intended use or sale, the capitalization of the borrowing costs shall be ceased. Where the acquisition and construction or production of a qualified asset is interrupted abnormally and the interruption period lasts for more than 3 months, the capitalization of the borrowing costs shall be suspended by the Group.

(17) Profits distribution

After the balance sheet date, the planned to distribute dividends or profits in the profits distribution plan after consideration and approval, are not recognized as liabilities on the balance sheet date, are disclosed in the Note separately.

(18) Affiliated Parties

When a party controls, jointly controls or exercises significant influence over another party, or when two or more parties are under the control, joint control or significant influence of the same party, the affiliated party relationships are constituted. The affiliated party can be an individual or an enterprise. Enterprises only under the control of the state but without other affiliated party relations do not constitute the affiliated party of the Group. The affiliated parties of the Group and the Company include, but not limited to:

- (a) The parent company of the Company;
- (b) The subsidiaries of the Company;
- (c) Other enterprises under the control of the same parent company of the Company;
- (d) The investors having joint control over or having significant influence on the Company;
- (e) The enterprises or individuals under the control and joint control of the same party with the Group;
- (f) The joint ventures of the Group, including the subsidiaries of the joint ventures;
- (g) The associated enterprises of the Group, including the subsidiaries of the associated enterprises;
- (h) The main individual investors and the close family members of the Group;
- (i) Key managerial personnel or and the close family members of the Group;
- (j) Key managerial personnel or and the close family members of the parent company of the Company;
- (k) Other enterprises that the Group's main individual investors, key managerial personnel, or close family members of such individual control, jointly control over.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (19) Main accounting estimates and judgment

When preparing financial statements, the managements of the Group need to use estimates and assumptions, which will affect the application of the accounting policies, and the amount of the assets, liabilities, income and expenses. The actual situations might be different from these estimates. The managements of the Group shall make consecutive evaluations on the key assumptions relating to estimates and the judgment of uncertain factors, the affects of the accounting estimates changes shall be recognized in the current period of the changes and the future periods.

Except for the data on the assumptions and risks factors of employee compensation retirement welfare and early retirement welfare, financial instruments fair value stipulated in Note 22 and Note 41, the uncertain factors of other main estimated amount are as follows:

##### (a) Impairment of accounts receivable

As stated in Note 3(10) (a), the Group examines the accounts receivable that are measured in accordance with the amortized cost, to evaluate whether impairment occur or not, and evaluates the concrete amount of the depreciation loss when have impairment. The objective evidences of depreciation include showing the observable data of the estimated future cash flow for individual or combination accounts receivable, showing the observable data that the debtor's financial position occurs main negative changes in the individual or combination accounts receivable, etc. if evidences shows that the objective evidences of the depreciation change in the previous year, the value of the relevant accounts receivable has recovered, it shall reverse the originally recognized depreciation loss.

##### (b) Inventory falling price reserves

As mentioned in Note 3(4), the Group shall estimate the net realizable value of inventories periodically, and recognize inventory falling price loss for the balance that inventories cost is higher than the net realizable value. When the Group estimates the net realizable value of inventories, takes the purpose of holding inventories into consideration, and takes the material information as the basis of estimates, which include the market price of the inventories and the previous operating costs of the Group. The actual sales price of inventories, cost of completion and sales expenses and tax might be changed with the market sales situation, production techniques or the actual usages of inventories, thus the amount of inventories falling price reserves might change with the above reasons. The adjustment of the inventories falling price reserves will affect the profits and losses of the estimated change of the current period.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (19) Main accounting estimates and judgment (Continued)

##### (c) Impairment of fixed assets and intangible assets and other assets

As stated in Note 3(10), the Group shall, on the date of balance sheet, make impairment evaluation on fixed assets and intangible assets and other assets, to determine whether the assets recoverable amount to fall under the book value. If it shows that the book value of fixed assets and intangible assets and other assets might not be recovered fully, the relevant assets will be deemed as depreciation, and recognize impairment loss accordingly.

The recoverable amount is the higher one of net value of the assets (or assets group)'s fair value deducts the disposal expenses and the current value of estimated future cash flow of the assets (or assets group). The Group is unable to obtain the open market price of the assets (or assets group) reliably, so it is unable to estimate the fair value of the assets reliably. When estimating the current value of the future cash flow, it needs to make major judgment on the assets (or assets group)'s output, sales price, relevant operating costs and the discount rate used in calculating current value. The Group shall use all relevant materials it can obtain when estimating the recoverable amount, including the relevant predications on the output, sales price and relating operating costs based on reasonable and supportable assumptions.

##### (d) Depreciation and amortization of fixed assets, intangible assets and other assets

As stated in Note 3(6) and Note 3(8), the Group accrues depreciation and amortization during the service life after considering the residual value of fixed assets and intangible assets. The Group examines the relevant assets service life, to determine the depreciation and amortization expense amount to be recorded in each report period. The service life of assets is determined by the Group in accordance with the previous experience on the similar products and combined with the expected technical changes. If the previous estimates change greatly, it shall make adjustment on the depreciation and amortization expenses in the future period.

##### (e) Products quality assurance

As stated in Note 25, the Group estimates the estimated liabilities in accordance with the recent products maintenance experience, after-sales quality maintenance promises offered to customers on the sales, maintenance and reconstructive locomotives and vehicles, parts and components. For the recent maintenance experience might not reflect the future maintenance situations, the Group's managements need to estimate this preparation applying many judgments. Any increase or decrease of the preparation might affect the future years' profits and losses.

#### 4. Taxes

(1) The Group's applicable taxes relating to products sales and providing services are operating tax, value-added tax, urban maintenance and construction tax and extra charges of education funds, etc.

<u>Tax categories</u>	<u>Taxation standards</u>
Operating tax	5% of the operating revenue taxable
Urban maintenance and construction tax	7% of the actually paid operating tax, value-added tax
Extra charges of education funds	5% of the actually paid operating tax, value-added tax Except for the following tax preferential, output tax is calculated as per 13%-17% of income from selling goods and taxable services the in accordance with provisions of the tax laws, after deduct the allowable deducted input tax, the balance is the value-added tax payable
Value-added tax	

#### (2) Income tax

The statutory tax rate of the Company is 25%, the year carried out at the preferential tax rate 15% (in 2010: 15%). In accordance with the approval of [2008] No. 124 Document issued by Department of Science and Technology of Jilin Province, the Company was identified and designated as high-tech enterprise, and got the No. GR200822000009 Designation of High-Tech Enterprises, and enjoys tax preferential of 15%. In Nov. 2011, the Company was identified and designated as high-tech enterprise again, and got the No. GR201122000054 Designation of High-Tech Enterprises, and the period of validity is 3 years.

The Company's other subsidiaries' income tax rate of this year is 25% (in 2010: 25%).

#### (3) Tax payable

<u>The Group</u>	<u>At beginning of year</u> RMB: Yuan	<u>At end of year</u> RMB: Yuan
Value-added tax payable	2,410,840.95	2,551,640.15
Operating tax payable	1,278,935.05	1,103,154.45
Income tax payable	3,669,339.40	2,323,724.47
Urban maintenance and construction tax and extra charges of education funds payable	2,152,914.19	367,492.58
Others payable	<u>9,624,429.67</u>	<u>32,525,693.89</u>
Total	<u>19,136,459.26</u>	<u>38,871,705.54</u>



#### 4. Taxation (Continuation )

##### (3) Taxation Payable (Continuation)

<u>This Company</u>	<u>Balance at the end of year</u> RMB Yuan	<u>Balance at beginning of year</u> RMB Yuan
Operation Taxation Payable	1,234,235.05	809,894.45
City maintenance and construction taxation & extra payable charges of education funds	1,858,249.27	82,636.16
Others payable	9,518,126.54	32,269,014.79
<b>Total</b>	<b>12,610,610.86</b>	<b>33,161,545.40</b>

#### 5. Combined Financial Statement

(1) The branch companies which has been contained in scope of this company's combined financial statement on Dec. 31, 2011 are as follows:

(a) Branch company got by combination through different controlling enterprises.

	This company's direct and indirect	This company's direct and indirect					Audit Agreement
<u>Name of company</u>	<u>Share holding rate</u>	<u>Voting right rate</u>	<u>Registration capital</u> Yuan	<u>Investment sum</u> Yuan	<u>Class</u>	<u>Type of company</u>	<u>Type</u> Note a
Chongqing Changchun passenger rail vehicle co., Ltd. ("Chongqing Changchun passenger")	51%	51%	200,000,000.00	102,686,732.02	Four class	Cisborder non-financial branch company	Standard

Registration capital and other changes of branch company:

<u>Name of company</u>	<u>Balance at beginning of year</u> RMB Yuan	<u>Increase in current year</u> RMB Yuan	<u>Decrease in current year</u> RMB Yuan	<u>Balance at the end of year</u> RMB Yuan
Chongqing Changchun passenger rail vehicle co., Ltd. ("Chongqing Changchun passenger")	100,000,000.00	100,000,000.00	-	200,000,000.00

Branch company Chongqing Changchun Passenger has increased registration capital of One Hundred Million RMB Yuan in May 2011. Shareholders of Chongqing Changchun Passenger invest in according to primary share holding rate. After finishing of increasing capital, registration capital of Chongqing Changchun Passenger has been changed into Two Hundred Million Yuan, and Chongqing Huaxi Accounting Firm has issued a capital verification report (CHXKY 【2011】 No.067).



## 5. Combined Financial Statement (continuation)

(1) The branch companies which has been contained in scope of this company's combined financial statement on Dec. 31, 2011 are as follows (continuation):

(a) Branch company got by setting up.

Name of company	This company's direct and indirect Share holding rate	This company's direct and indirect Voting right rate	Registration capital RMB Yuan	Investment sum RMB Yuan	Class	Type of company	Audit Agreement
Changchun passenger rail vehicle science and technology development Co., Ltd. ("science and technology company")	52.73%	52.73%	11,000,000.00	5,800,000.00	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle imports and exports Co., Ltd. ("Imports and Exports Company")	95%	95%	20,000,000.00	19,110,373.63	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle foundry and forging Co., Ltd. ("Foundry and Forging Company")	100%	100%	29,867,622.50	42,583,845.35	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle Parts Sale Co., Ltd. ("Parts Company")	100%	100%	800,000.00	800,000.00	Four class	Cisborder non-financial branch company	Standard

Casting and forging company has ceased main producing and operation activities in 2011, and carried out cancellation of registration on Nov. 30, 2011.

## 6. Currency Capital

This group	Balance at the end of year		Balance at beginning of year	
	Original currency Yuan	RMB / Equivalent RMB Yuan	Original currency Yuan	RMB / Equivalent RMB Yuan
Cash				
RMB		115,068.92		132,671.00
Bank deposit				
RMB		282,686,390.03		282,782,429.35
Dollar	7,668,273.09	48,317,021.93	101,843.82	674,481.06
Euro	10,035,885.18	81,917,912.78	1,125,900.28	9,915,240.82
Yen	9,580,990.00	777,047.03	2,580,628.00	209,701.83
HK Dollar	12,233,831.75	9,917,967.40	21,625,131.81	18,401,473.41
Total		423,731,408.09		312,115,997.47

## 6. Currency Capital (Continuation)

<u>This company</u>	<u>Balance at the end of year</u>		<u>Balance at beginning of year</u>	
	Original currency	RMB / Equivalent RMB Yuan	Original currency	RMB / Equivalent RMB Yuan
Cash				
RMB		74,857.08		77,841.84
Bank deposit				
RMB		225,863,255.36		216,150,718.37
Dollar	7,663,534.11	48,287,162.09	97,109.64	643,128.01
Euro	7,779,142.46	63,497,250.33	61,958.21	545,634.98
Yen	8,580,988.00	695,943.87	1,580,627.00	128,441.75
HK Dollar	12,233,831.75	9,917,967.40	21,625,131.81	18,401,473.41
Total		348,336,436.13		235,947,238.36

On Dec. 31, 2011, 1 HK Dollar converted into RMB 0.8107 Yuan (2010: RMB 0.8509 Yuan); 1 Dollar converted into RMB 6.3009 Yuan (2010: RMB 6.6227 Yuan); 1 Euro converted into RMB 8.1625 Yuan (2010: RMB 8.8065 Yuan); 1 Yen converted into RMB 0.0811 Yuan (2010: RMB 0.0813 Yuan).

On Dec. 31, 2011, this group and this company have no capital of holding in pledge, freeze and etc. which could change current limitation or exit potential recover risk.

## 7. Bill Receivable

<u>This group</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	76,680,704.00	-
Total	76,680,704.00	
<u>This company</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	66,680,704.00	-
Total	66,680,704.00	

Bills receivable before will all become due in one year.

## 8. Account Receivable

(1) Account receivable in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginnin of year</u> RMB Yuan
Related company receivable	364,766,877.30	48,363,101.67
Other customers	2,884,247,161.73	683,821,586.83
Subtotal	3,249,014,039.03	932,184,688.50
Reduce: bad account reserve	12,658,909.49	17,389,067.61
Total	3,236,355,129.54	714,795,620.89

<u>This company</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Branch company receivable	477,811,101.29	114,738,277.60
Other related companies receivable	352,492,475.22	47,779,307.07
Other customers	2,496,131,206.45	543,503,407.92
Subtotal	3,326,436,782.96	706,020,992.59
Reduce: bad account reserve	12,456,160.05	15,534,882.09
Total	3,313,978,622.91	690,486,110.50

(2) Account receivable aging and bad account reserve analysis as follows:

<u>This group</u>	<u>Amount at the end of year</u>				<u>Amount at beginning of year</u>			
	Paper balance		Bad account reserve		Paper balance		Bad account reserve	
	RMB Yuan Rate (%)							
Single Sum								
Serious and								
Individual provision								
Bad account reserve								
Account receivable								
Total in group								
Provision bad account reserve								
Account receivable	3,249,014,039.03	100%	12,658,909.49	0.39%	732,184,688.50	100%	17,389,067.61	2.37%
Single Sum though is not serious								
single individual provision								
bad account reserve								
Account receivable								
Total	3,249,014,039.03	100%	12,658,909.49	.39%	732,184,688.50	100%	17,389,067.61	2.37%



## 8. Account Receivable (Continuation)

(2) Account receivable aging and bad account reserve are analyzed as follows (Continuation):  
Rate in paper balance shall be counted in according to the way that this type account receivable divide total sum of account receivable at the end of year, bad account reserve rate shall be counted in according to the way that this type account receivable bad account reserve which has been accrued in the end of year divide this type account receivable sum in the end of year.

Adopt method of composing test to accrue account receivable bad account reserve.

<u>This group</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance	Bad account reserve		Paper balance	Bad account reserve	
	RMB Yuan	Rate	RMB Yuan	RMB Yuan	Rate	RMB Yuan
Within one year ( Include one year )	3,154,493,870.58	97.09%	-	613,382,938.76	83.77%	-
One to two year (include two years )	62,76,591.25	1.93%	6,276,859.12	88,551,782.24	12.10%	8,855,178.22
Two to three years (include three years )	31,725,352.31	0.98%	6,345,070.45	24,163,128.58	3.30%	4,832,625.72
Over three years	46,224.89	0.00%	12,658,909.49	732,184,688.50	100%	17,389,067.61
Total	3,249,014,039.03	100%	12,658,909.49	732,184,688.50	100%	17,389,067.61

Account aging is counted start from the confirmation date of account receivable.  
There has not any total sum accrued bad account reserve items in account receivable.  
Current annual has no actual charged off account receivable produced by related trading.  
Current annual has no overdue bills receivable transacted into account receivable.

<u>This Company</u>	<u>Amount at the end of year</u>				<u>Amount at beginning of year</u>			
	Paper balance	Bad account reserve			Paper balance	Bad account reserve		
	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)
Single Sum								
Serious and								
Individual provision								
Bad account reserve								
Account receivable								
Total in group								
Provision bad account								
reserve								
Account receivable	3,326,434,782.96	100%	12,456,160.05	0.37%	706,020,99.59	100%	15,534,882.09	2.20%
Single Sum though is								
not serious single								
individual provision								
bad account reserve								
Account receivable								
Total	3,326,434,782.96	100%	12,456,160.05	0.37%	706,020,99.59	100%	15,534,882.09	2.20%

Rate in paper balance shall be counted in according to the way that this type account receivable divide total sum of account receivable at the end of year, bad account reserve rate shall be counted in according to the way that this type account receivable bad account reserve which has been accrued in the end of year divide this type account receivable sum in the end of year.

## 8. Account Receivable (Continuation)

(2) Account receivable aging and bad account reserve are analyzed as follows (Continuation):

Adopt method of composing test to accrue account receivable bad account reserve

<u>This group</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan
Within one year	-					
( Include one year )	3,233,394,527.93	97.20%	-	597,770,480.39	84.67%	
One to two year	61,796,258.89	1.86%	6,179,625.89	85,991,162.40	12.18%	8,599,166.24
(include two years )						
Two to three years	31,197,771.25	0.94%	6,239,554.25	16,172,510.88	2.29%	3,234,502.18
(include three years )						
More than three years	46,224.89	0.00%	36,979.91	6,086,838.92	0.86%	3,701,263.67
Total	3,326,434,782.96	100%	12,456,160.05	706,020,992.59	100%	15,534,882.09

Account aging is counted start from the confirmation date of account receivable.

There has no total sum accrued bad account reserve items in this company's account receivable.

Current annual has no actual account receivable

Current annual has no actual charged off account receivable produced by related trading.

Current annual has no overdue bills receivable transacted into account receivable.

### (3) Account receivable obligation right transaction items

According to debt right transaction contract signed by this company and bank and confirmed in related contract circles, this company transferred total of RMB 628,140 Thousand Yuan account receivable to the bank, start from transfer date (the date of bank paid the transfer price to this company), bank will withdraw all searching rights to this company and directly demands debtor of account payable to carry out debt obligation, this group and this company accordingly confirm cost withdraw of RMB 17,890 Thousand Yuan.

Till to Dec. 31, 2011, account receivable before which has been transferred is totally paid off.

## 9. Advanced Payment Account

(1) Advanced payment account in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment related company	251,785,625.05	416,994,972.60
Other customers	1,287,089,903.24	2,324,496,412.58
Subtotal	1,538,875,528.29	2,741,491,385.18
Reduce: bad account reserve	-	128,688.03
Total	1,538,875,528.29	2,741,362,697.15

<u>This Company</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment branch company		222,179,486.90
Advanced payment Other related company	251,785,625.05	415,706,100.60
Other customers	1,279,624,688.92	2,310,478,265.89
Subtotal	1,531,410,313.97	2,948,363,853.39
Reduce: bad account reserve	-	-
Total	1,531,410,313.97	2,948,363,853.39



## 9. Advanced Payment Account (Continuation)

(2) Advanced payment account aging and bad account reserve are analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan
Within one year						
( Include one year )	1,538,875,528.29	100%	-	2,740,204,504.93	99.95%	
One to two year	-			1,286,880.25	0.05%	128,688.03
(include two years )						
Total	<u>1,538,875,528.29</u>	<u>100%</u>	<u>-</u>	<u>2,741,491,385.18</u>	<u>100%</u>	<u>128,688.03</u>

Account aging is counted start from the confirmation date of account advanced payment amount.  
This group has no account advanced payment amount with account aging more than one year.

<u>This company</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan	Paper balance RMB Yuan	Rate	Bad account reserve RMB Yuan
Within one year						
( Include one year )	1,531,410,313.97	100%	-	2,948,363,853.39	100%	
Total	<u>1,531,410,313.97</u>	<u>100%</u>	<u>-</u>	<u>2,948,363,853.39</u>	<u>100%</u>	

Account aging is counted start from the confirmation date of account advanced payment amount.  
This company has no account advanced payment amount with account aging more than one year.

## 10. Other Amount Receivable

(1) Other amount receivable is analyzed by customer type as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Receivable related company		832,147.58
Other customers	125,777,396.16	90,940,054.20
Subtotal	<u>125,777,396.16</u>	<u>91,772,201.78</u>
Reduce: bad account reserve	6,707,054.45	2,640,467.52
Total	<u>119,070,341.71</u>	<u>89,131,734.26</u>

# 10. Other Amount Receivable (Continuation)

(1) Other amount receivable is analyzed by customer type as follows (continuation):

<u>This group</u>	<u>Amount at the end of year</u>	<u>Amount at beginning of year</u>
	RMB Yuan	RMB Yuan
Receivable related company	-	832,147.58
Other customers	119,771,451.32	85,951,895.13
Subtotal	119,771,451.32	86,784,042.71
Reduce: bad account reserve	6,654,360.96	2,534,236.84
Total	113,117,090.36	84,249,805.87

(2) Other amount receivable aging and bad account reserve analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u>				<u>Amount at beginning of year</u>			
	Paper balance		Bad account reserve		Paper balance		Bad account reserve	
	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)	RMB Yuan	Rate (%)
Single Sum								
Serious and								
Individual provision								
Bad account reserve								
Other account receivable								
Total in group								
Provision bad reserve								
Other account receivable	125,777,396.16	100%	6,707,054.45	5.33%	91,772,201.78	100%	2,640,467.52	2.88%
Single Sum though is								
not serious								
single individual								
provision bad account								
reserve								
Other account receivable								
Total	125,777,396.16	100%	6,707,054.45	5.33%	91,772,201.78	100%	2,640,467.52	2.88%

Rate in paper balance shall be counted in according to the way that this type account receivable divide total sum of other account receivable at the end of year, bad reserve rate shall be counted in according to the way that this type account receivable bad account reserve which has been accrued in the end of year divide this type other account receivable sum in the end of year.

# 10. Other Amount Receivable (Continuation)

(1) Other amount receivable is analysed by customer type as follows (continuation):

Other account receivable adopts method of composition test to accrue bad account reserve.

This group	Amount at the end of year			Amount at beginning of year		
	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan
Within one year ( Include one year )	84,159,076.05	66.91%	-	68,729,932.42	74.89%	-
One to two years (include two years )	19,307,615.19	15.35%	1,930,761.53	22,100,396.24	24.08%	2,210,039.62
Two to three years (include three years)	21,851,603.81	17.37%	4,370,320.77	328,485.25	0.365	65,697.05
More than three years	459,101.11	0.37%	405,982.15	613,387.87	0.67%	364,730.85
Total	125,777,396.16	100%	6,707,054.45	91,772,201.78	100%	2,640,467.52

Account aging is counted start from the confirmation date of other account receivable.

There has no total sum accrued bad account reserve items in this company's account receivable.

Current annual has no actual other account receivable

Current annual has no actual charged off other account receivable produced by related trading.

Current annual has no overdue bills receivable transacted into other account receivable.

This company	Amount at the end of year				Amount at beginning of year			
	Paper balance RMB Yuan	Bad account reserve Rate (%)	RMB Yuan	Rate (%)	Paper balance RMB Yuan	Bad account reserve Rate (%)	RMB Yuan	Rate (%)
Single Sum								
Serious and								
Individual provision								
Bad account reserve								
Other account receivable								
Total in group								
Provision bad reserve								
Other account receivable	119,771,451.32	100%	6,654,360.96	5.56%	86,784,042.71	100%	2,534,236.84	2.92%
Single Sum though is								
not serious								
single individual								
provision bad account								
reserve								
Other account receivable								
Total	119,771,451.32	100%	6,654,360.96	5.56%	86,784,042.71	100%	2,534,236.84	2.92%

Rate in paper balance shall be counted in according to the way that this type account receivable divide total sum of other account receivable at the end of year, bad reserve rate shall be counted in according to the way that this type account receivable bad account reserve which has been accrued in the end of year divide this type other account receivable sum in the end of year.



## 10. Other Amount Receivable (Continuation)

(1) Other amounts receivable analyzed by customer type are as follows (continuation):

Other account receivable adopts method of composition test to accrue bad account reserve

<u>This group</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan
Within one year ( Include one year )	78,291,984.76	65.37%		63,992,516.50	73.74%	
One to two year (include two years )	19,265,218.03	16.08%	1,926,521.81	22,052,544.00	25.41%	2,205,254.40
Two to three years (include three years)	21,803,751.57	18.21%	4,360,750.32	328,485.25	0.38%	65,697.05
More than three years	410,496.96	0.34%	367,08.83	410,496.96	0.47%	263,285.39
Total	119,771,451.32	100%	6,654,360.96	86,784,042.71	100%	2,534,236.84

Account aging is counted start from the confirmation date of other account receivable.

There has no total sum accrued bad account reserve items in this company's account receivable.

Current annual has no actual other account receivable

Current annual has no actual charged off other account receivable produced by related trading.

Current annual has no overdue bills receivable transacted into other account receivable.

## 11. Inventory

<u>This group</u>	<u>Amount at the end of year</u>			<u>Amount at beginning of year</u>		
	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan	Paper balance RMB Yuan	Bad account reserve Rate	RMB Yuan
Original material	4,243,443,413.29		4,243,443,413.29	2,978,013,720.18	-	2,978,013,720.18
Self-produced semi-manufactures and product in produce (product in study )	8,621,196,311.22	34,209,550.25	8,586,986,760.97	5,571,691,929.85	6,558,932.69	5,565,132,997.16
Inventory goods (product finished)	35,439,839.68		35,439,839.68	13,998,101.42		13,998,101.42
Surplus materials (package good, low value easily consumed goods etc.)	10,761,503.99		10,761,503.99	8,646,669.54		8,646,669.54
Others	41,121,125.43		41,121,125.43	106,088,008.83		106,088,008.83
Total	12,951,962,193.61	34,209,550.25	12,917,752,643.36	8,678,438,429.82	6,558,932.69	8,671,879,497.13

In this group's inventory yearend balance has no loan expense capitalization sum.

Inventory not use to guarantee of this group.

## 11. Inventory (Continuation)

This company	Amount at the end of year		Amount at beginning of year			
	Paper balance	Rise down price				
	RMB Yuan	Rate	RMB Yuan	RMB Yuan	Rate	RMB Yuan
Original material	4,207,135,018.37	-	4,208,135,018.	2,961,134,167.01	-	2,961,134,167.01
Self-produced						
semi-manufactures and						
product in produce						
(product in study )	8,477,122,302.45	34,209,550.25	8,442,912,752.	5,555,324,507.55	6,558,932.69	5,548,765,574.86
Merchandise inventory						
(product finished)						
Supply materials						
(package good, low						
value easily consumed						
goods etc.)	10,761,503.99	-	10,761,503.99	8,646,669.54	-	8,646,669.54
Others	41,121,125.43	-	41,121,125.43	106,088,008.83	-	106,088,008.83
Total	12,73,139,950.24	34,209,550.25	12,702,930,399.	8,631,193,352.93	6,558,932.69	8,624,634,420.24

In this group's inventory yearend balance has no loan expense capitalist sum.

Inventory not use to guarantee of this group.

Inventory rise down reserve analyzed as follows:

This group and this company	Paper balance at beginning of year	Current increase	Current reduce			Paper balance at the end of year
	RMB Yuan	RMB Yuan	Refer back RMB Yuan	Write off RMB Yuan	Other reduce RMB Yuan	RMB Yuan
Self-produced semi-manufactures and product in produce (product in study )	6,558,932.69	28,581,863.9	-	931,246.23	-	34,209,550.25
Total	6,558,932.69	28,581,863.9	-	931,246.23	-	34,209,550.25

## 12 Other Current Asset

This group	Paper value at the end of year		Paper value at beginning of year	
	RMB		RMB	
Appreciation tax to be deducted	45,782,925.91		355,763,655.64	
Enterprise income tax to be prepaid	10,341,824.63		1,17,530.08	
Other taxes to be prepaid	211,288.00		-	
Total	56,336,038.54		356,954,185.72	

This company	Paper value at the end of year		Paper value at beginning of year	
	RMB		RMB	
Appreciation tax to be deducted	20,539,055.95		341,439,257.54	
Enterprise income tax to be prepaid	10,341,824.63		1,187,530.08	
Total	30,880,880.58		342,626,787.62	

### 13 Long-term Share Right Investment

This group	Paper balance at beginning of year RMB Yuan	Current increase sum RMB Yuan	Current decrease sum RMB Yuan	Paper balance at The end of year RMB Yuan
Long-term share right Investment				
-Invest on co-operation company	231,796,194.27	-	77,926,824.97	153,869,369.30
-Invest on other companies	16,847,249.19	7,879,339.43	-	24,726,588.62
Subtotal	248,643,443.46	7,879,339.43	77,926,824.97	178,595,957.92
Reduce: depreciation reserve	-	-	-	-
Total	248,643,443.46			178,595,957.92
This company	Paper balance at beginning of year RMB Yuan	Current increase sum RMB Yuan	Current decrease sum RMB Yuan	Paper balance at The end of year RMB Yuan
-Invest on branch company	119,980,951.00	51,000,000.00	42,583,845.35	128,397,105.65
-Invest on co-operation company	231,796,194.27	-	77,926,824.97	153,869,369.30
-Invest on other companies	16,847,249.19	7,879,339.43	-	24,726,588.62
Subtotal	368,624,394.46	58,879,339.43	120,510,670.32	306,993,063.57
Reduce: depreciation reserve				
Total	368,624,394.46			306,993,063.57

Details on every branch company, please see note 5 (1).



### 13 Long-term Share Right Investment (Continuation)

(1) On Dec. 31, 2011, this group and this company's analyzed on main co-operation company investment are as follows:

					This group/ company				
				This group/ company	in investment unit's	Balance in the end of year		Current year	
Co-operation company	Registered Place	Business Nature	Registered Capital	Share holding rate	Voting right rate	Total asset sum	Total debt sum	Total operation income sum	Net profit / (deficit)
Changchun Bombardier Rail Vehicle Co., Ltd.	Changchun	Manufacturing Industry	RMB 23,945	50%	50%	1,049,446,593.4	742,341,244.67	77,558,684.33	(35,853,649.93)

Important accounting policy, accounting evaluation of co-operation and this group & this company have no serious difference.

#### (2) Important share right investment detail list by cost accounting

This group and this company	Initial investment cost	Balance at Beginning of year	Current increase	Current decrease	Balance at the end of year	Current cash bonus
Company's name to be invested	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Tehran Vehicle Manufacturing Company	16,847,249.19	7,879,339.43	-	24,726,588.62	276,734.00	

#### (3) Important share right investment accounted by rights law

This group and this company	Initial investment cost	Balance at Beginning of year	Current increase	Current decrease	Balance at the end of year	Current cash bonus
Company's name to be invested	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Changchun Bombardier Rail Vehicle Co., Ltd.	83,491,832.10	231,796,194.27	-	77,926,824.97	153,869,369.30	60,000,000.00

Chairman of Changchun Bombardier Rail Vehicle Co., Ltd. passed share redistribution vote in 2011, redistributed RMB Yuan 60,000,000.00 Yuan to this group and this company, till to Dec. 31, 2011, Changchun Bombardier Rail Vehicle Co., Ltd. has not pay for this share right.

#### 14 Fixed Assets

<u>The corporation</u>	<u>The book balance at the beginning of the year</u>	<u>The increase this year</u>	<u>The decrease this year</u>	<u>The book balance at the end of the year</u>
	RMB(yuan)	RMB(yuan)	RMB(yuan)	RMB ( yuan )
Cost or valuation :				
Houses and buildings	1,812,358,785.47	785,783,671.34	-	2,598,142,456.81
Machinery and equipment	2,030,291,576.98	1,375,773,917.96	1,099,676,585.82	2,306,388,909.12
Conveyance	83,860,736.02	23,040,635.77	29,240,830.05	77,660,541.74
Office equipment and other equipment	151,829,417.05	57,193,291.49	26,379,362.38	182,643,346.16
Total	4,078,340,515.52	2,241,791,516.56	1,155,296,778.25	5,164,835,253.83
Accumulated depreciation				
Houses and buildings	355,033,773.90	83,433,005.73	-	438,466,782.63
Machinery and equipment	777,539,530.90	182,806,564.50	325,982,135.92	644,363,959.45
Conveyance	46,366,184.28	12,014,559.66	11,717,091.72	46,663,652.22
Office equipment and other equipment	48,563,671.08	26,902,536.69	7,911,565.65	67,554,642.12
Total	1,227,503,163.16	315,156,666.58	345,610,793.32	1,197,049,036.42
Book value:				
Houses and buildings	1,457,325,008.57			2,159,675,674.318
Machinery and equipment	1,252,752,046.08			1,662,024,949.67
Conveyance	37,494,551.74			30,996,889.52
Office equipment and other equipment	103,265,745.97			115,088,704.04
Total	2,850,837,352.36			3,967,786,217.41

In 2011 , the original value of fixed assets from the construction in process of the Company is 1,410,892,327.27 RMB yuan .

On December 31th , 2011, the original value of fixed assets had been fully depreciated is 325,821,790.10 RMB yuan by the Company but being continued to use.

On December 31 th , 2011, the Company has no temporarily idle fixed assets .

In 2011, the original value of fixed assets scrapped by the Company , net worth and income is 8,634,998.20 RMB yuan, 640,604.93 RMB yuan and 653,961.55 RMB yuan respectively .

In 2011, the Group sold the fixed assets whose original value and net value is 1,146,661,780.05 RMB yuan and 809,045,380.00 RMB yuan respectively at net book value price and in leaseback of finance and lease .

In 2011 , the depreciation for the year of the new accumulated depreciation expense was 303,045,081.04 RMB yuan .

On December 31 th , 2011, the Company has no temporarily idle fixed assets .

#### 14 Fixed Assets (continued)

On December 31st, 2011, the corporation has no fixed assets with significant reserve disposal.

<u>The corporation</u>	<u>The book balance at the beginning of the year</u>	<u>The increase this year</u>	<u>The decrease this year</u>	<u>The book balance at the end of the year</u>
	<u>RMB(yuan)</u>	<u>RMB(yuan)</u>	<u>RMB(yuan)</u>	<u>RMB ( yuan )</u>
Cost or valuation :				
Houses and buildings	1,741,722,917.46	677,889,424.54	-	2,419,612,342.00
Machinery and equipment	2,011,490,663.66	1,284,036,954.32	1,099,676,585.82	2,195,851,032.16
Conveyance	71,497,378.06	19,264,756.87	29,240,830.05	61,521,304.88
Office equipment and other equipment	128,286,504.96	48,963,793.50	26,379,362.38	150,870,936.08
Total	3,952,997,464.14	2,030,154,929.23	1,155,296,778.25	4,827,855,615.12
Accumulated depreciation				
Houses and buildings	351,983,911.56	79,968,057.34	-	431,951,968.90
Machinery and equipment	776,607,364.76	189,745,298.20	325,982,135.95	640,370,527.01
Conveyance	41,013,282.40	9,743,577.70	11,717,091.72	39,039,768.38
Office equipment and other equipment	45,426,315.25	23,588,147.80	7,911,565.65	61,102,897.40
Total	1,215,030,873.97	303,045,081.04	345,610,793.32	1,172,465,161.69
Book value:				
Houses and buildings	1,389,739,005.90			1,987,660,373.10
Machinery and equipment	1,234,883,298.90			1,555,480,505.15
Conveyance	30,484,095.66			22,481,536.50
Office equipment and other equipment	82,960,189.71			89,768,038.68
Total	2,737,966,590.17			3,655,390,453.43

In 2011, the original value of fixed assets from the construction in process of the Company is 1,219,332,748.90 RMB yuan.

On December 31st, 2011, the original value of fixed assets had been fully depreciated is 323,544,005.06 RMB yuan by the Company but being continued to use.

On December 31st, 2011, the Company has no temporarily idle fixed assets.

In 2011, the original value of fixed assets scrapped by the Company, net worth and income is 8,634,998.20 RMB yuan, 640,604.93 RMB yuan and 653,961.55 RMB yuan respectively.

In 2011, the Group sold the fixed assets whose original value and net value is 1,146,661,780.05 RMB yuan and 809,045,380.00 RMB yuan respectively at net book value price and in leaseback of finance and lease.

In 2011, the depreciation for the year of the new accumulated depreciation expense was 303,045,081.04 RMB yuan.



#### 14. Fix Asset (Continuation)

On Dec. 31, 2011, this company has no fix asset used to mortgage and guarantee.

On Dec. 31, 2011, this company has no important fix asset get ready to disposal.

On Dec. 31, 2011, this group and this company's fixed asset situations rent in the way of financial lease are as follows:

This group and this company	Mechanical Equipment RMB Yuan	Transportation Tools RMB Yuan	Official Equipment RMB Yuan	Total RMB Yuan
Dec. 31, 2011				
Paper original value	835,398,410.30	17,514,218.33	18,425,877.64	871,338,506.27
Reduce: Accumulated reserve	79,969,729.60	3,211,645.25	3,447,477.61	86,628,851.46
Reduce: Depreciation Reserves	-	-	-	
Paper net amount	<u>755,428,680.70</u>	<u>14,302,573.08</u>	<u>14,978,400.03</u>	<u>784,709,653.81</u>

## 15 Project under Construction

On Dec. 31, 2011, top ten items list of this group's project under construction paper balance at the end of year are as follows:

Name of project	Budge amount	Project investment		Year	Transact			Interest capitalization	Include: current income	Capital origin	Project progress
		Take part in			Fix asset	Other	Balance at the end of year				
		rate of	Balance at								
		budge (%)	beginning of year								
	RMB		RMB Yuan	RMB Yuan	RMB Yuan	RMB	RMB Yuan	RMB Yuan	RMB Yuan		
	Thousand Yuan						Yuan				
Total	4, 910, 260		2, 168, 838, 303.81	2, 041, 590, 577.48		1, 410, 892, 327.27		2, 799, 536, 554.02	53, 604, 887.61	33, 057, 219.41	Special loan
Include:											
Test line I period of second bid project	158, 861	99%	152, 970, 392.57	3, 889, 860.77				156, 860, 253.34	5, 368, 567.55	2, 709, 493.16	Special loan 99%
Direct line test line	79, 767	99%	75, 312, 912.86	4, 453, 453.85				79, 766, 366.71	5, 362, 141.63	3, 453, 453.85	Special loan 99%
Test line first bid project	68, 096	99%	66, 488, 788.68	1, 606, 614.11				68, 095, 402.79	775, 690.29	775, 690.29	Special loan 99%
Test line II period of second bid project	82, 960	82%	26, 200, 000.00	41, 708, 337.73				67, 908, 337.73	2, 682, 878.87	2, 682, 878.87	Special loan 82%
Test factory house project	62, 165	75%	21, 989, 750.44	24, 406, 134.37				46, 395, 884.81	2, 113, 467.69	2, 113, 467.69	Special loan 75%
Chongqing II period distributed prohect	64, 000	67%	9, 223, 140.00	33, 812, 175.50				43, 035, 315.50			Own fund 67%
T beam project	30, 397	99%	29, 373, 631.26	1, 023, 288.68				30, 936, 919.94	347, 062.54	347, 062.54	Special loan 99%
Auto body manufacturing building II											
Elimination systems of dusty and wet	32, 172	94%	14, 573, 441.84	15, 688, 947.56				30, 262, 389.40	1, 121, 186.81	1, 121, 186.81	Special loan 94%
High speed train manufacturing base 350											
Mile construction item ground is smooth	27, 988	99%	27, 495, 667.64	491, 460.73				27, 987, 128.37	895, 667.67		Special loan 99%
Auto body manufacturing building II project	62, 096	44%	18, 817, 620.98	8, 710, 456.86				27, 528, 077.84	314, 126.71	314, 126.71	Special loan 44%

Capitalization rate of capitalization sum of this group used to confirm loan expenses is 5.87%-5.97% (year 2010: 5.83%-5.94%).

## 16 Intangible assets

### The corporation

	The book balance at the beginning of the year	The increase this year	The decrease this year	The book balance at the end of the year
	RMB(yuan)	RMB(yuan)	RMB(yuan)	RMB ( yuan )
<b>Cost or valuation :</b>				
Land use rights	850,906,024.16	309,540,000.00	-	1,160,446,024.16
Non-patented technology	20,180,000.00	-	-	20,180,000.00
Patent right	-	813,431.91	-	813,431.91
Trademark right	14,175.00	-	-	14,175.00
Software	127,439,516.18	16,612,988.79	31,416.77	144,021,088.20
<b>Total</b>	<b>998,539,715.34</b>	<b>326,966,420.70</b>	<b>31,416.77</b>	<b>1,325,474,719.27</b>
<b>Accumulated amortization :</b>				
Land use rights	41,125,196.71	20,873,504.92	-	61,998,691.63
Non-patented technology	7,158,666.87	2,008,000.01	-	9,166,666.88
Patent right	-	21,304.14	-	21,304.14
Trademark right	11,749.30	517.51	-	12,266.81
Software	61,570,953.41	21,988,684.91	31,416.77	83,528,221.55
<b>Total</b>	<b>109,866,556.29</b>	<b>44,892,011.49</b>	<b>31,416.77</b>	<b>154,727,151.01</b>
<b>Book value:</b>				
Land use rights	809,780,837.45			1,098,447,332.53
Non-patented technology	13,021,333.13			11,013,333.12
Patent right	-			792,127.77
Trademark right	2,425.70			1,908.19
Software	65,868,562.77			60,492,866.65
<b>Total</b>	<b>888,673,159.05</b>			<b>1,170,747,568.26</b>

On December 31th , 2011, there was no capitalization amount of borrowing costs on the book value of intangible assets in the corporation .

The corporation makes no use of the intangible assets with indefinite useful life in 2011 .

On December 31th , 2011, the corporation makes no use of intangible assets for mortgages and guarantees .



16 Intangible assets (continued)

<u>The Company</u>	<u>The book balance at the beginning of the year</u>	<u>The increase this year</u>	<u>The decrease this year</u>	<u>The book balance at the end of the year</u>
	RMB(yuan)	RMB(yuan)	RMB(yuan)	RMB ( yuan )
Cost or valuation :				
Land use rights	819,786,305.58	309,540,000.00	-	1,129,326,305.58
Non-patented technology	180,000.00	-	-	180,000.00
Trademark right	14,175.00	-	-	14,175.00
Software	126,568,557.49	16,134,759.85	-	142,703,317.34
Total	946,549,038.07	325,674,759.85	-	1,272,223,797.92
Accumulated amortization :				
Land use rights	39,600,460.44	20,251,110.52	-	59,851,570.96
Non-patented technology	158,666.75	7,999.97	-	166,666.72
Trademark right	11,749.30	517.51	-	12,266.81
Software	61,262,683.63	21,774,045.96	-	83,036,729.59
Total	101,033,560.12	42,033,673.96	-	143,067,234.08
Book value:				
Land use rights	780,185,845.14			1,069,474,734.62
Non-patented technology	21,333.25			13,333.28
Trademark right	2,425.70			1,908.19
Software	65,305,873.86			59,666,587.75
Total	845,515,477.95			1,129,156,563.84

On December 31th , 2011, there was no capitalization amount of borrowing costs on the book value of intangible assets in the corporation .

The corporation makes no use of the intangible assets with indefinite useful life in 2011 .

On December 31th , 2011, the corporation makes no use of intangible assets for mortgages and guarantees .

## 17 Deferred Income Tax Asset and Debt

(1) Deferred income tax asset or debt after deduction to each other and accordingly deductible temporary difference after deduction to each other:

This Group	Paper balance at the end of year		Paper balance at beginning of year	
	Deferred income tax after deduction to each other / debt RMB Yuan (debt listed in "-")	Deductible temporary difference after deduction to each other RMB Yuan ( tax payable temporary difference listed in "-" )	Deferred income tax after deduction to each other / debt RMB Yuan (debt listed in "-")	Deductible temporary difference after deduction to each other RMB Yuan ( tax payable temporary difference listed in "-" )
Deferred income tax asset				
Bad account reserve	2,930,438.88	19,365,963.94	3,232,643.89	20,158,223.16
Inventory falling price reserve	5,131,432.53	34,209,550.25	2,812,368.79	18,749,125.28
Salary for workers	212,768.41	1,418,456.08	2,114,387.93	14,095,919.52
Projected debt	23,948,356.09	159,655,707.32	12,568,179.44	83,787,862.97
Inner selling not achieved	5,196,139.67	20,784,558.67	1,509,413.72	6,488,389.99
Losing and profit set-off				
Government subsidy	2,250,000.00	15,000,000.00	2,250,000.00	15,000,000.00
Total	39,669,135.58	250,434,236.26	24,486,993.77	158,279,520.92
This Company	Paper balance at the end of year		Paper balance at beginning of year	
	Deferred income tax after deduction to each other / debt RMB Yuan (debt listed in "-")	Deductible temporary difference after deduction to each other RMB Yuan ( tax payable temporary difference listed in "-" )	Deferred income tax after deduction to each other / debt RMB Yuan (debt listed in "-")	Deductible temporary difference after deduction to each other RMB Yuan ( tax payable temporary difference listed in "-" )
Deferred income tax asset				
Bad account reserve	2,866,578.15	19,110,521.01	2,710,367.84	18,069,118.93
Inventory falling price reserve	5,131,432.53	34,209,550.25	2,812,368.79	18,749,125.28
Salary for workers	212,768.41	1,418,456.08	2,114,387.93	14,095,919.52
Projected debt	23,948,356.09	159,655,707.32	12,568,179.44	83,787,862.97
Government subsidy	2,250,000.00	15,000,000.00	2,250,000.00	15,000,000.00
Total	34,409,135.18	229,394,234.66	22,455,304.00	149,702,026.70

## (2) Deferred Income Tax Asset List not Confirmed

Item	This group		This company	
	Balance at the end of year RMB Yuan	Balance at beginning of year RMB Yuan	Balance at the end of year RMB Yuan	Balance at beginning of year RMB Yuan
Deductible temporary difference				
Deductible Losing	78,833,816.99	66,525,994.61		
Total	78,833,816.99	66,525,994.61		

## 17 Deferred Income Tax Asset and Debt (Continuation)

(3) Deductible losing of unconfirmed deferred income tax asset will become due in the next year:

	This group		This company	
	Balance at the end of year	Balance at beginning of year	Balance at the end of year	Balance at beginning of year
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
2014	19,145,879.91	28,631,540.25		
2015	33,704,576.20	37,894,454.36		
2016	25,983,360.88			
Total	78,833,816.99	66,525,994.61		

According to accounting policy recorded in note 3(12), because there has not yet any records show that chongqing company can achieve profit taxable used to deduct related losing, and also can not surely evaluate tax payable income sum may receive in term of deductible temporary difference transfer back in pre-term, so this group has not confirm deferred income tax asset on accumulation of RMB Yuan 78,833,816.99 Yuan (Year 2010: RMB 66,525,994.61 Yuan, include casting and forging company RMB 13,675,538.50 Yuan). According to current tax law, these deductible losing from year of happening, could deduct taxable profit not more than five years.

## 18 Asset Depreciation Reserve

Item	Note	Balance at beginning of year	Current accrue	Current reduce		Balance at the end of year
		RMB Yuan	RMB Yuan	Refer back	Write off	RMB Yuan
				RMB Yuan	RMB Yuan	
Account receivable	8	17,389,067.61	566,198.92	4,965,400.64	330,956.40	12,658,909.49
Advanced payable	9	128,688.03		128,688.03		
amount						
Other account	10	2,640,467.52	4,120,124.12	53,537.19		6,707,054.45
receivable						
Inventory	11	6,558,932.69	28,581,863.79		931,246.23	34,209,550.25
Total		26,717,155.85	33,268,186.83	5,147,625.86	1,262,202.63	53,575,514.19



## 18. Asset Impairment reserve (Continuation)

This company's asset depreciation reserve situation on Dec. 31, 2011 are as follows:

Item	Note	Balance at beginning of year	Current year accrue	Current year reduce		Balance at the end of year
		RMB Yuan	RMB Yuan	Refer back RMB Yuan	Write off RMB Yuan	RMB Yuan
Account receivable	8	15,534,882.09	214,966.92	3,293,688.96		12,456,160.05
Other account receivable	10	2,534,236.84	4,120,124.12			6,654,360.96
Inventory	11	6,558,935.69	28,581,863.79		931,246.23	34,209,550.25
Total		24,628,051.62	32,916,954.83	3,293,688.96	931,246.23	53,320,071.26

Reasons of impairment confirmed in current year of every kind of asset; see notes related to every asset items.

## 19. Short-term Loan

<u>This group</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB Yuan	<u>Balance at beginning of year</u> RMB/ Equivalent RMB Yuan
Credit loan	2,872,805,884.26	81,841,042.07
Include: entrusted loan of related party	1,360,000,000.00	
Total	2,872,805,884.26	81,841,042.07

<u>This company</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB Yuan	<u>Balance at beginning of year</u> RMB/ Equivalent RMB Yuan
Credit loan	2,767,805,884.26	61,841,042.07
Include: entrusted loan of related party	1,360,000,000.00	
Total	2,767,805,884.26	61,841,042.07

On Dec. 31, 2011, this group and this company do not have short-term loan which is not paid back in time.

## 20. Bill Payable

<u>This group</u>	<u>Paper balance at the end of year</u> RMB Yuan	<u>Paper balance at beginning of year</u> RMB Yuan
Bank acceptance draft	2, 002, 849, 370.36	470, 760, 472.04
Total	2, 002, 849, 370.36	470, 760, 472.04

<u>This company</u>	<u>Paper balance at the end of year</u> RMB Yuan	<u>Paper balance at beginning of year</u> RMB Yuan
Bank acceptance draft	1, 896, 865, 044.68	470, 760, 472.04
Total	1, 896, 865, 044.68	470, 760, 472.04

## 21 Account Payable

<u>This group</u>	<u>Paper balance at the end of year</u> RMB Yuan	<u>Paper balance at beginning of year</u> RMB Yuan
Within one year (include one year )	7, 197, 201, 976.24	3, 335, 421, 109.94
One to two year (include two years)	554, 799, 631.65	554, 571, 446.70
Two to three years (include three years)	5, 172, 276.19	7, 978, 126.77
Over three years	1, 792, 944.38	1, 824, 800.48
Total	7, 758, 966, 828.46	3, 899, 795, 483.89

On Dec. 31, 2011, this group's account payable with account aging more than three years is RMB 1,792,944.38 Yuan, is material quality guarantee fee not paid.

## 21 Account Payable (Continued)

<u>This Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (including one year)	6,936,384,392.51	3,329,779,364.78
One to two years (including two years)	551,402,576.92	553,782,964.19
Two to three years (including three years)	4,406,274.65	5,025,399.65
More than three years	-	-
Total	7,492,193,244.08	3,888,587,728.62

## 22 Advance Receipt

<u>This Group</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (including one year)	2,190,997,405.06	6,931,776,664.64
More than one year	1,998,468,350.11	1,279,297,705.30
Total	4,189,465,755.17	8,211,074,369.94

On Dec. 31, 2011, this group's advance receipt whose aging was more than one year was RMB 1,998,468,350.11 yuan which was mainly the deposit received for the newly built urban rail project. As for the longer commissioning period of this project, the contract hasn't been finished executing yet.

<u>This Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (including one year)	2,190,650,006.79	6,883,636,783.58
More than one year	1,998,468,350.11	1,277,677,705.30
Total	4,189,118,356.90	8,161,314,488.88



## 23 Employee Benefits Payable (continued)

<u>The corporation</u>	The book balance at the beginning of the year	The book balance at the beginning of the year	The payable amount this year	The book balance at the end of the year
	RMB (Yuan)	RMB (Yuan)	RMB (Yuan)	RMB (Yuan)
Salaries and bonuses allowances and subsidies	5,063,541.53	1,058,914,796.86	1,058,489,765.15	5,488,573.24
Employee benefits	-	82,026,576.86	82,026,576.86	-
Social insurance premiums	25,748,617.41	216,045,286.46	230,486,261.57	11,307,642.30
Basic medical insurance premiums	(2,594,443.43)	44,036,292.58	45,490,896.44	(4,049,047.29)
Basic endowment insurance	28,085,848.70	3,473,669.94	15,847,362.82	15,712,155.82
Supplementary medical insurance	563,951.12	147,714,696.74	147,689,004.70	589,643.16
Unemployment insurance	48,887.85	14,497,504.41	14,519,963.21	26,429.05
Work-related injuries insurance	(372,185.09)	6,268,056.76	6,475,178.11	(579,306.44)
Maternity insurance	16,558.26	55,066.03	463,856.29	(392,232.00)
Housing fund	127,953.01	89,728,297.86	89,781,616.86	74,634.01
Union funds and employee education expenses	5,359,301.79	47,532,746.14	34,493,910.31	18,398,137.62
Housing reform subsidies	137,118,268.03	-	-	137,118,268.03
Early retirement benefits (i)				
- The part paid within one year	20,620,000.00	16,333,236.64	19,482,236.64	17,471,000.00
- The supplementary retirement benefits (i)				
- The part paid within one year	7,021,000.00	3,774,187.63	3,838,187.63	6,957,000.00
Others	-	34,592,872.90	34,592,872.90	-
Total	201,058,681.77	1,548,948,001.35	1,553,191,427.92	196,815,255.20

## (i) The benefits of early retirement and supplementary retirement

	The book balance at the end of the year	The book balance at the beginning of the year
	RMB ( yuan )	RMB ( yuan )
Early retirement benefits	70,150,000.00	88,817,000.00
Supplementary retirement benefits	62,769,000.00	62,399,357.31
Minus : The part paid within one year		
- Early retirement benefits	17,471,000.00	20,620,000.00
-Supplementary retirement benefits	6,957,000.00	7,021,000.00
Employee benefits payable ( Non-current liabilities )	108,491,000.00	123,575,357.31

## 23 Employee Benefits Payable

### (i) The benefits of early retirement and supplemental retirement (continued)

<u>The Company</u>	<u>The book balance at the beginning of the year</u>	<u>The book balance at the beginning of the year</u>	<u>The payable amount this year</u>	<u>The book balance at the end of the year</u>
	<u>RMB (Yuan)</u>	<u>RMB (Yuan)</u>	<u>RMB (Yuan)</u>	<u>RMB (Yuan)</u>
Salaries and bonuses allowances and subsidies	4,500,000.00	1,037,615,924.19	1,037,615,924.19	3,412,000.00
Employee benefits	-	78,914,650.39	78,914,650.39	-
Social insurance premiums	24,936,283.31	212,611,071.71	226,892,565.18	10,654,789.84
Basic medical insurance premiums	(2,756,010.46)	43,264,064.68	44,577,746.67	(4,069,792.45)
Basic endowment insurance	-	145,332,067.40	145,332,067.40	-
Supplementary medical insurance	28,085,848.70	3,473,669.94	15,847,362.82	15,712,155.82
Unemployment insurance	-	14,363,209.96	14,363,209.96	-
Work-related injuries insurance	(393,554.93)	6,178,059.73	6,365,904.91	(581,400.11)
Maternity insurance	-	-	406,173.42	(406,173.42)
Housing fund	-	88,944,333.00	88,944,333.00	-
Union funds and employee education expenses	5,168,769.35	46,612,526.58	34,069,613.17	17,711,682.76
Housing reform subsidies	137,118,268.03	-	-	137,118,268.03
Early retirement benefits (ii)				
- The part paid within one year	20,620,000.00	16,333,236.64	19,482,236.64	17,471,000.00
- The supplementary retirement benefits (ii)				
- The part paid within one year	7,021,000.00	3,774,187.63	3,838,187.63	6,957,000.00
Others	-	33,415,180.25	33,415,180.25	-
<b>Total</b>	<b>199,364,320.69</b>	<b>1,517,133,110.39</b>	<b>1,523,172,690.45</b>	<b>193,324,740.63</b>

### (ii) The benefits of early retirement and supplementary retirement

	<u>The book balance at the end of the year</u>	<u>The book balance at the beginning of the year</u>
	<u>RMB ( yuan )</u>	<u>RMB ( yuan )</u>
Early retirement benefits	70,150,000.00	88,817,000.00
Supplementary retirement benefits	62,769,000.00	62,399,357.31
<b>Minus : The part paid within one year</b>		
- Early retirement benefits	17,471,000.00	20,620,000.00
-Supplementary retirement benefits	6,957,000.00	7,021,000.00
<b>Employee benefits payable ( Non-current liabilities )</b>	<b>108,491,000.00</b>	<b>123,575,357.31</b>

## 23 Employee Compensation Payable (Continued)

### (ii) Early Retirement Benefits and Supplementary Retirement Benefits

The above liabilities of the group and the company are evaluated by the independent actuary Mercer Consulting (Shanghai) Co., Ltd through the use of “expectant unit cost method”. On the balance sheet date, major actuarial assumption analyses which are used to evaluate the above liabilities are listed as follows:

Dec. 31, 2011

Discount rate	
-Early retirement benefits	2.9%
-Retired expenses beyond co-ordination	3.7%
-Supplementary retirement benefits	3.3%
Annual growth rate of living allowances	9.5%
Annual growth rate of wage during the early retirement period	8%
Annual growth rate of medical expenses	10%
Expected future average life span	Refer to <i>China Life Insurance Mortality Experience Table of 2005 (2000-2003)</i>

## 24 Other Account Payable

<u>This Group</u>	<u>Year-end Balance</u>	<u>Year-beginning Balance</u>
	RMB yuan	RMB yuan
Within one year (including one year)	306,797,422.51	306,903,313.86
One to two years (including two years)	4,255,538.45	1,873,475.72
Two to three years (including three years)	1,577,249.81	15,023,885.48
More than three years	16,306,416.64	3,992,429.43
 Total	 328,936,627.41	 327,793,104.49

On Dec. 31, 2011, the amount of this group's other account payable whose aging was more than three years was RMB 16,306,416.64 yuan which was mainly the owing engineering quality assurance payment.



## 26 Estimated Liabilities (Continued)

<u>This Company</u>	<u>Year-beginning Book Balance</u>		<u>This Year's Increased Amount</u>	
	RMB yuan		RMB yuan	
	<u>This Year's Reductive Amount</u>		<u>Year-end Book Balance</u>	
	RMB yuan		RMB yuan	
Product Quality Assurance	73,329,780.89	181,149,562.63	94,823,636.20	159,655,707.32
Money-losing Contract	12,190,192.59	-	12,190,192.59	-
Credit assignment of receivables	10,458,082.08	3,628,989.00	14,087,071.08	-
Total	95,978,055.56	184,778,551.63	121,100,899.87	159,655,707.32

The group and the company provide after-sale quality maintenance guarantee for sold, repaired and remolded engine, vehicle and parts and is responsible for the repair and replacement of products within the term of service. Above-mentioned product quality assurance estimated liabilities are calculated and drawn on expectant product quality assurance expenses need bearing according to the past practical situation of repair and returning.

## 27 Long-term Loan

<u>The Group and The Company</u>	<u>Year-end Book Balance</u>	<u>Year-beginning Book Balance</u>
	RMB/ Equivalent RMB yuan	RMB/ Equivalent RMB yuan
Fiduciary loan	1,091,680,000.00	863,000,000.00
Among which: consignment loan of related party	1,091,680,000.00	863,000,000.00
Total	1,091,680,000.00	863,000,000.00

Analyze and list in accordance with the due date of undiscounted contract cash flow (including interest calculated according to the contract interest rate (in case of floating interest rate, current interest rate of Dec. 31 should be adopted)) as follows:

<u>The Group and The Company</u>	<u>Year-end Book Balance</u>	<u>Year-beginning Book Balance</u>
	RMB yuan	RMB yuan
Within one year (including one year)	208,149,475.62	126,567,990.28
One to two years (including two years)	199,289,331.37	122,451,848.33
Two to three years (including three years)	190,569,786.16	118,056,190.28
More than three years	1,020,161,569.26	848,512,478.33
Total of undiscounted contract cash flow	1,618,170,162.41	1,215,588,507.22
Book value	1,222,180,000.00	935,000,000.00

## 24 Other Account Payable (Continued)

<u>This Group</u>	<u>Year-end Balance</u>	<u>Year-beginning Balance</u>
	RMB yuan	RMB yuan
Within one year (including one year)	291,720,310.97	249,472,355.24
One to two years (including two years)	732,246.18	1,731,387.05
Two to three years (including three years)	1,577,249.81	15,125,212.79
More than three years	16,306,416.64	3,992,429.43
Total	310,336,223.60	270,321,384.51

On Dec. 31, 2011, the amount of this group's other account payable whose aging was more than three years was RMB 16,306,416.64 yuan which was mainly the owing engineering quality assurance payment.

## 25 Non-current Liability Maturing within One Year

<u>The Group and The Company</u>	<u>Year-end Book Balance</u>	<u>Year-beginning Book Balance</u>
	RMB/ Equivalent RMB	RMB/ Equivalent RMB
	yuan	yuan
Long-term loan maturing within one year	130,500,000.00	72,000,000.00
Among which: fiduciary loan	130,500,000.00	72,000,000.00
Among which: consignment loan of related party	130,500,000.00	72,000,000.00
Long-term account payable maturing within one year	36,742,863.36	10,720,853.86
Total	167,242,863.36	82,720,853.86

## 26 Estimated Liabilities

<u>This Group</u>	<u>Year-beginning Book Balance</u>	<u>This Year's Increased Amount</u>
	RMB yuan	RMB yuan
	<u>This Year's Reductive Amount</u>	<u>Year-end Book Balance</u>
	RMB yuan	RMB yuan
Product Quality Assurance	73,555,702.38	181,450,032.42
Money-losing Contract	12,190,192.59	-
Credit assignment of receivables	10,458,082.08	3,628,989.00
Total	96,203,977.05	185,079,021.42

28 Long-term Account Payable

<u>The Group and The Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Actuarial cost of three kinds of personnel	108,491,000.00	123,575,357.31
Financing lease payable	803,143,191.67	49,753,612.21
Total	911,634,191.67	173,328,969.52

29 Other Non-current Liability

<u>This Group</u>	<u>Year-beginning Balance</u> RMB yuan	<u>This Year's Increased Amount</u> RMB yuan	<u>Year-end Balance</u> RMB yuan
	<u>This Year's Reductive Amount</u> RMB yuan		

Deferred income (i)	144,797,521.54	406,233,297.18	72,274,676.83	478,756,141.89
Total	144,797,521.54	406,233,297.18	72,274,676.83	478,756,141.89

(i) Deferred Income

<u>This Group</u>	<u>Year-beginning Book Balance</u> RMB yuan	<u>This Year's Increased Amount</u> RMB yuan	<u>Year-end Book Balance</u> RMB yuan
	<u>This Year's Reductive Amount</u> RMB yuan		

Earmark	139,678,000.00	178,879,500.00	66,868,984.32	251,688,515.68
Discount funds	4,799,521.54	-	-	4,799,521.54
Other	320,000.00	227,353,797.18	5,405,692.51	222,268,104.67
Total	144,797,521.54	406,233,797.18	72,274,676.83	478,756,141.89

<u>This Company</u>	<u>Year-beginning Balance</u> RMB yuan		<u>This Year's Increased Amount</u> RMB yuan	
	<u>This Year's Reductive Amount</u> RMB yuan		<u>Year-end Balance</u> RMB yuan	
Deferred income (ii)	132,857,521.54	405,354,760.00	64,508,323.33	473,703,958.21
Total	132,857,521.54	405,354,760.00	64,508,323.33	473,703,958.21

(ii) Deferred Income

<u>This Company</u>	<u>Year-beginning Book Balance</u> RMB yuan	<u>This Year's Increased Amount</u> RMB yuan	<u>Year-end Book Balance</u> RMB yuan
	<u>This Year's Reductive Amount</u> RMB yuan		

Earmark	127,738,000.00	178,725,000.00	59,826,668.00	246,636,332.00
Discount funds	4,799,521.54	-	-	4,799,521.54
Other	320,000.00	226,629,760.00	4,681,655.33	222,268,104.67
Total	132,857,521.54	405,354,760.00	64,508,323.33	473,703,958.21



### 30 Paid-up Capitals

The registered capital structure of our company on Dec. 31 is as follows:

<u>The Group and The Company</u>	<u>Year-beginning Balance</u>					
	Investment Amount	Percentage				
	RMB yuan					
	<u>This Year's Increased Amount</u>	<u>This Year's Reductive Amount</u>				
	<u>Year-end Balance</u>					
	Investment Amount	Percentage				
	RMB yuan					
China CNR Corporation Limited	1,535,679,251.00	73.85%	-	-	1,535,679,251.00	73.85%
Changchun Railway Vehicles Facilities Co., Ltd	404,310,656.00	19.44%	-	-	404,310,656.00	19.44%
Jilin Province Golden Bean Industry Group Co., Ltd	107,478,046.00	5.17%	-	-	107,478,046.00	5.17%
KTK Group Co., Ltd	19,679,674.00	0.95%	-	-	19,679,674.00	0.95%
Jiangsu Joint Investment Co., Ltd	10,600,000.00	0.51%	-	-	10,600,000.00	0.51%
China Railway Science & Technology Development Corporation						
	1,311,978.00	0.06%	-	-	1,311,978.00	0.06%
Dunhua Forestry Co., Ltd of Jilin Yanbian Forestry Group	327,995.00	0.02%	-	-	327,995.00	0.02%
Total	2,079,387,600.00	100.00%	-	-	2,079,387,600.00	100.00%

The paid-up capital structure of our company on Dec. 31 is as follows:

<u>The Group and The Company</u>	<u>Balance at the Beginning and End of the Period</u>	
	Investment Amount	Percentage
	RMB yuan	
China CNR Corporation Limited	1,535,679,251.00	73.85%
Changchun Railway Vehicles Facilities Co., Ltd	404,310,656.00	19.44%
Jilin Province Golden Bean Industry Group Co., Ltd	107,478,046.00	5.17%
KTK Group Co., Ltd	19,679,674.00	0.95%
Jiangsu Joint Investment Co., Ltd	10,600,000.00	0.51%
China Railway Science & Technology Development Corporation	1,311,978.00	0.06%
Dunhua Forestry Co., Ltd of Jilin Yanbian Forestry Group	327,995.00	0.02%
Total	2,079,387,600.00	100.00%

### 31 Capital Reserve

<u>This Group</u>	<u>Year-beginning Balance</u> RMB yuan			<u>This Year's Increased Amount</u> RMB yuan
	<u>This Year's Reductive Amount</u> RMB yuan			<u>Year-end Balance</u> RMB yuan
Capital premium	2,403,390,329.55	-	-	2,403,390,329.55
Other capital reserve				
-Other	86,388,752.25	-	-	86,388,752.25
Total	2,489,729,081.80	-	-	2,489,729,081.80

<u>This Company</u>	<u>Year-beginning Balance</u> RMB yuan			<u>This Year's Increased Amount</u> RMB yuan
	<u>This Year's Reductive Amount</u> RMB yuan			<u>Year-end Balance</u> RMB yuan
Capital premium	2,363,298,622.20	-	-	2,363,298,622.20
Other capital reserve				
-Other	86,338,752.25	-	-	86,338,752.25
Total	2,449,637,374.45	-	-	2,449,637,374.45

### 32 Surplus Reserve

<u>The Group and The Company</u>	<u>Year-beginning Balance</u> RMB yuan		<u>This Year's Increased Amount</u> RMB yuan
Legal surplus reserve fund	82,784,589.33		122,698,790.33
Total	82,784,589.33		122,698,790.33
	<u>This Year's Reductive Amount</u> RMB yuan		<u>Year-end Balance</u> RMB yuan
Legal surplus reserve fund	-		205,483,379.66
Total	-		205,483,379.66

Cause, Basis of Change

Distribute according to articles of association and profit

### 33 Undistributed Profit

	<u>This Group</u>	<u>This Company</u>
	RMB yuan	RMB yuan
This year's year-beginning balance	588,820,884.64	636,342,111.83
This year's increased amount	1,242,123,382.69	1,226,987,903.30
Among which: this year's net profit transferring-in	1,242,123,382.69	1,226,987,903.30
This year's reductive amount	480,327,847.15	480,327,847.15
Among which: this year's withdrawn surplus reserve amount	122,698,790.33	122,698,790.33
This year's distributed cash dividends amount	357,629,056.82	357,629,056.82
This year's year-end balance	1,350,616,420.18	1,383,002,167.98
Among which: appropriation of profits approved by the board of directors		

According to the regulation of articles of association, this company withdraws legal surplus reserve by 10% of the rest left after using the company's net profit of this year to make up previous annual losses.

According to the regulation of articles of association, the general meeting of stockholders of this company decided and approved the profit distribution plan during the period from Jan. 1, 2010 to Oct. 31, 2010 (namely from the valuation date of capital increment and absorption merger to the actual completion date of capital increment and absorption merger) and passed the resolution of conducting cash distribution by each shareholder's shareholding ratio before the capital increment after withdrawing legal surplus reserve by 10% of the net profit during the above period. The total distribution amount is RMB 357,629,056.82 yuan.

Surplus reserve withdrawn by subsidiary in this year which belongs to the parent company is RMB 9,372,415.00 yuan (the year of 2010: RMB 72,265.04 yuan).

By Dec. 31, 2011, this group's undistributed profit which belongs to the parent company includes the surplus reserve RMB 10,878,377.05 yuan (the year of 2010: RMB 1,505,962.05 yuan) withdrawn by this company's subsidiary.

### 34 Business Incomes

<u>This Group</u>	<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
	<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
	RMB yuan	RMB yuan	RMB yuan	RMB yuan
Main business subtotal				
- New creation	20,854,960,374.90	18,149,824,539.55	9,077,921,033.22	7,785,621,218.32
- Maintenance and remolding				
-	651,662,793.85	597,425,270.30	461,625,541.67	333,616,768.06
- Parts	1,566,775,508.09	962,889,914.96	1,013,197,381.41	597,849,509.90
Other business subtotals	316,000,027.44	230,773,917.40	215,836,754.65	156,994,521.51
Total	23,389,398,704.28	19,940,913,642.21	10,768,580,710.95	8,874,082,017.79



### 34 Business Incomes (Continued)

<u>This Company</u>	<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
	<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
	RMB yuan	RMB yuan	RMB yuan	RMB yuan
Main business subtotal				
- New creation	20,854,960,374.90	18,155,836,065.27	9,077,921,033.22	7,785,666,722.49
- Maintenance and remolding				
-	622,671,170.86	574,180,789.87	457,844,669.61	330,462,136.31
- Parts	1,712,425,506.86	1,164,300,938.62	962,199,323.30	584,922,802.81
Other business subtotals	289,372,673.32	217,042,773.43	209,292,061.15	155,387,362.11
Total	23,479,429,726.02	20,111,360,567.19	10,707,257,087.28	8,856,439,023.72

### 35 Financial Expenses

<u>This Group</u>	<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
	RMB yuan		RMB yuan	
Interest expense		316,890,898.76		93,796,516.14
Unacknowledged financing charges amortization (i)		43,189,784.54		6,536,904.99
Minus: capitalized interest expense (ii)		33,057,219.41		23,275,360.73
Net interest expense		327,023,463.89		77,058,060.40
Interest income of savings		(8,902,703.85)		(5,619,896.90)
Net foreign exchange loss		85,327,484.89		106,586,496.07
Other financing charges		32,430,744.51		21,163,516.30
Total		435,878,989.44		199,188,175.87

- (i) The unacknowledged financing charges amortization is the amortization amount in the current period of unacknowledged financing charges which are related to actuarial supplementary retirement benefit and early retirement benefit and unacknowledged financing charges' amortization amount in the current period which is generated from finance lease.
- (ii) The capitalized rate of this year's general loan interest capitalization is 5.87%-5.97%.

### 35 Financial Expenses (Continued)

<u>This Company</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB yuan	RMB yuan
Interest expense		
Unacknowledged financing charges amortization (i)	312,038,471.90	60,117,083.39
Minus: capitalized interest expense (ii)	43,189,784.54	6,536,904.99
Net interest expense	323,019,926.57	65,369,104.35
Interest income of savings	(7,919,984.52)	(4,146,472.28)
Net foreign exchange loss	84,155,370.54	105,610,693.19
Other financing charges	32,223,842.54	20,646,151.9
Total	431,479,155.13	187,479,477.19

- (iii) The unacknowledged financing charges amortization is the amortization amount in the current period of unacknowledged financing charges which are related to actuarial supplementary retirement benefit and early retirement benefit and unacknowledged financing charges' amortization amount in the current period which is generated from finance lease.
- (iv) The capitalized rate of this year's general loan interest capitalization is 5.87%-5.97%.

### 36 Loss from Asset Devaluation

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Accounts receivables	(461,302.82)	2,893,130.21
Inventory	28,581,863.79	16,217,548.37
Total	28,120,560.97	19,110,678.58

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Accounts receivables	1,041,402.08	2,043,665.93
Inventory shrinkage	28,581,863.79	11,383,485.11
Total	29,623,265.87	13,427,151.04

### 37 Net Investment (Loss)/Income

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Long-term equity investment		
Among which: investment (loss)/income affirmed by equity accounting	(17,926,824.97)	12,756,299.89
Investment income affirmed by cost accounting	276,734.00	-
Other investment losses	-	(4,317,911.88)
Total	(17,650,090.97)	8,438,388.01

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Long-term equity investment		
Among which: investment (loss)/income affirmed by equity accounting	(17,926,824.97)	12,756,299.89
Investment income affirmed by cost accounting	15,035,420.86	-
Investment loss of equity disposition	(13,062,533.99)	-
Other investment losses	-	(4,317,911.88)
Total	(15,953,938.10)	8,438,833.01



### 38 Non-business Incomes

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Non-current assets disposition gains	653,961.55	1,923,718.29
Among which: fixed assets disposition gains	653,961.55	1,923,718.29
Government grants (i)	69,214,676.83	77,490,900.00
Liquidated damages income	8,876,081.10	9,636,230.35
Other gains	2,312,025.68	527,632.19
Total	81,056,745.16	89,578,480.83

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Non-current assets disposition gains	653,961.55	1,923,718.29
Among which: fixed assets disposition gains	653,961.55	1,923,718.29
Government grants (i)	64,508,323.33	74,534,400.00
Liquidated damages income	8,858,629.10	9,631,635.96
Other gains	1,278,459.58	-
Total	75,299,459.58	86,089,754.25

#### (i) Government Grants

##### This Group

<u>This Group</u>	
<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
<u>This Company</u>	
<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan

Research Grant	3,982,316.32	-	-	-
Earmark	61,088,668.00	72,240,900.00	61,088,668.00	69,284,400.00
Other	4,143,692.51	5,250,000.00	3,419,655.33	5,250,000.00
Total	69,214,676.83	77,490,900.00	64,508,323.33	74,534,400.00

### 39 Non-business Expenditure

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Non-current assets disposition loss	-	479,534.16
Among which: fixed assets disposition loss	-	479,534.16
Outward donating	2,600,000.00	2,260,000.00
Amerced outlay -	32,944,240.59	15,288.39
Other expenditure	11,007,520.76	22,922,293.62
Total	46,551,761.35	25,677,116.17

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Non-current assets disposition loss	-	477,204.66
Among which: fixed assets disposition loss	-	477,204.66
Outward donating	2,600,000.00	2,260,000.00
Amerced outlay	32,928,000.00	7,917.00
Other expenditure	10,741,957.85	22,612,282.65
Total	46,269,957.85	25,357,404.31

### 40 Income Tax Expense

#### (1) Composition of Income Tax Expense

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
This year's income tax	212,213,535.52	62,735,484.23
Variation of deferred income tax	(15,182,141.81)	(5,961,217.04)
Total	197,031,393.71	56,774,267.19

40 Income Tax Expense (Continued)

(1) Composition of Income Tax Expense (Continued)

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
This year's income tax	198,322,271.54	56,304,322.33
Variation of deferred income tax	(11,953,831.18)	(4,818,093.13)
Total	186,368,440.36	51,486,229.20

(2) The relationship between income tax expense and accounting profit is as follows:

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Profit before tax	1,426,525,929.24	559,831,659.26
Statutory tax rate	15%	15%
Expected income tax calculated by statutory tax	213,978,889.39	83,974,748.89
Influence exerted by applying different tax rates of the subsidiary	4,360,857.55	6,898,035.97
Non-deductible business entertainment expenses	1,663,141.80	1,413,804.67
Loss/ (income) of joint venture should be made up by non-deductible/undesired tax payment	2,647,513.65	(1,913,444.98)
Research and development expense which can be deducted additionally with the allowance of tax law	(27,700,064.81)	(24,914,611.03)
Tax credit of purchasing domestic equipments	-	(365,233.34)
Other	2,081,056.13	(8,319,032.99)
This year's income tax expense	197,031,393.71	56,774,267.19



#### 40 Income Tax Expense (Continued)

- (2) The relationship between income tax expense and accounting profit is as follows  
(Continued):

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Profit before tax	1,413,356,343.66	611,598,051.11
Statutory tax rate	15%	15%
Expected income tax calculated by statutory tax	212,003,451.55	91,739,707.67
Non-deductible business entertainment expenses	1,273,973.86	945,648.96
Loss/ (income) of joint venture should be made up by non-deductible/undesired tax payment	433,710.62	(1,913,444.98)
Research and development expense which can be deducted additionally with the allowance of tax law	(27,700,064.81)	(24,914,611.03)
Tax credit of purchasing domestic equipments	-	(365,233.34)
Other	357,369.14	(14,005,838.08)
This year's income tax expense	186,368,440.36	51,486,229.20

#### 41 Statement of Cash Flow Supplementary Material

- (1) Adjust net profit to operational activities cash flow:

<u>This Group</u>	<u>This Year's Amount</u> RMB yuan	<u>Last Year's Amount</u> RMB yuan
Net profit	1,229,494,535.53	503,057,392.07
Plus: property depreciation preparation	28,120,560.97	19,110,678.58
Depreciation of fixed assets	315,156,666.58	236,572,056.97
Amortization of intangible assets	44,892,011.49	37,702,575.13
Amortization of long-term deferred expenses	42,000.00	45,500.00
Net income of disposing of fixed assets	(653,961.55)	(1,444,184.13)
Financial expenses	313,924,523.26	129,867,631.53
Investment loss/ (income)	17,650,090.97	(12,756,299.89)
Increment of deferred income tax assets	(15,182,141.81)	(5,961,217.04)
Increment of inventory	(4,273,523,763.79)	(6,058,532,193.05)
Increment of operating project receivables	(1,334,917,422.43)	(462,340,459.01)
Increment of operating project payables	1,715,498,054.06	5,567,413,688.05
Cash flow net amount generated from operating activities	(1,959,498,846.72)	(47,264,830.79)

41.Statement of Cash Flow Supplementary Material (Continued)

(1) Adjust net profit to operational activities cash flow (Continued):

<u>This Company</u>	<u>This Year's Amount</u>	<u>Last Year's Amount</u>
	RMB yuan	RMB yuan
Net profit	1,226,987,903.30	560,111,821.91
Plus: property depreciation preparation	29,623,265.87	13,427,151.04
Depreciation of fixed assets	303,045,081.04	209,539,440.75
Amortization of intangible assets	42,033,673.96	35,471,696.78
Net income of disposing of fixed assets	(653,961.55)	(1,446,513.63)
Financial expenses	308,798,448.30	116,742,902.24
Investment loss/ (income)	15,953,938.10	(12,756,299.89)
Increment of deferred income tax assets	(11,953,831.18)	(4,818,093.13)
Increment of inventory	(4,105,946,597.31)	(6,033,032,236.13)
Increment of operating project receivables	(1,573,021,549.65)	(815,676,084.51)
Increment of operating project payables	1,778,035,902.62	5,541,370,662.75

Cash flow net amount generated from operating activities (1,987,097,726.50) (391,065,551.82)

(2) Significant investment and financing activities which do not refer to cash deposit and withdrawal:

<u>This Group</u>	
<u>This Year's Amount</u>	<u>Last Year's Amount</u>
RMB yuan	RMB yuan
<u>This Company</u>	
<u>This Year's Amount</u>	<u>Last Year's Amount</u>
RMB yuan	RMB yuan
Fixed assets under financing lease	- 62,293,126.27 -62,293,126.27

(3) Net changes of cash and cash equivalents:

<u>This Group</u>	
<u>This Year's Amount</u>	<u>Last Year's Amount</u>
RMB yuan	RMB yuan
<u>This Company</u>	
<u>This Year's Amount</u>	<u>Last Year's Amount</u>
RMB yuan	RMB yuan
Year-end balance of cash	423,731,408.09 312,115,997.47 348,336,436.13 235,947,238.36
Minus: year-beginning balance of cash	312,115,997.47 655,917,643.24 235,947,238.36 490,775,210.03
Net increasing/ (reducing) amount of cash and cash equivalents	111,615,410.62 (343,801,645.77) 112,389,197.77 (254,827,971.67)

#### 41 Statement of Cash Flow Supplementary Material (Continued)

(4) Analysis of cash and cash equivalents held by the group and the company is as follows:

	This Group			
	<u>This Year's Amount</u>		<u>Last Year's Amount</u>	
	RMB yuan		RMB yuan	
	This Company			
	<u>This Year's Amount</u>		<u>Last Year's Amount</u>	
	RMB yuan		RMB yuan	
(a) Monetary capital	423,731,408.09	312,115,997.47	348,336,436.13	235,947,238.36
- Cash in hand	115,068.92	132,671.00	74,857.08	77,841.84
- Bank deposit which can be used for payment at any time				
-	423,535,206.59	311,983,326.47	348,261,579.05	235,869,396.52
(b) Year-end balance of cash and cash equivalents				
	423,731,408.09	312,115,997.47	348,336,436.13	235,947,238.36

#### 42 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments

This group is faced with risks of various financial instruments in daily routines, these risks mainly include:

- Credit risk
- Liquidity risk
- Interest rate risk
- Foreign exchange risk

What follows in this passage is mainly about discussions of the above risk exposure and its cause of formation, risk management objective, policy and process as well as risk metering method and so on.

This group's objective of engaging in risk management is to get appropriate equivalence between risk and income and strive to reduce negative influence of risk on this group's financial performance. Giving this risk management objective, this group has formulated risk management policy so as to distinguish and analyze risk facing this group, set appropriate risk acceptable level and designed relevant internal control procedure so as to supervise the risk level of this group. The group will regularly check and approve these risk management policies and relevant internal control system so as to adapt changes of market situation or this group's operating activities. The internal auditing department of this group also regularly or randomly checks whether the execution of internal control system meets the risk management policies or not.



(1) Credit Risk

Credit risk refers to the risk of encountering financial loss of the other party, which is caused by one party's failure to perform obligations as a member of the financial instruments. The credit risks of this group mainly come from monetary capital and account receivables. The management layer will persistently supervise exposures of these credit risks.

Except cash, this group's monetary capital is mainly deposited in financial organizations with well-deserved reputation, concerning of which, the management layer thinks there is no major credit risk and expect that default of the opposite side will not cause loss to our group.

The primary customers of our group are Ministry of Railways and corporations invested and administrated by local railway department. In general, the group does not require mortgage from the customers. In order to supervise the credit risk of this group, our group analyzes the group's customer data according to aging of accounts.

On Dec. 31, 2011 and Dec. 31, 2010, the group and the company did not have account receivables which were overdue but all hadn't any impairment after assessments in individual way and compound mode.

On Dec. 31, 2011, the accounts receivables of the group and the company's top five customers separately took up 45% and 44% (the year of 2010: 45% and 32%) of the group and the company's receivables and other account receivable, therefore, this group had a certain degree of credit risk centralization.

The biggest credit risk exposure borne by the group is the book amount of each financial asset in the statement of assets liabilities. This group didn't provide any other guarantee which may lead credit risk endurance of the group.

(2) Liquidity Risk

Liquidity risk refers to the risk of encountering capital shortage when the enterprise is implementing obligations which are related to financial liability. This company and each subsidiary are responsible for their own cash management work, including short-term investment and loan raising of cash surplus and expected cash demand payable (in case that loan exceeds some default top line of authorization, approval should be get from the board of directors of this company). The group's policy is to timely supervise short-term and long-term working capital demands, and whether they are up to the regulations of loan agreement so as to insure of maintaining abundant cash storage and negotiable securities which can be conversed to cash at any time, and obtain enough reserve funds which will be supplied under major financial organizations' promises so as to meet short-term and longer-term working capital demands.

Repayment duration analysis of this group's long-term liability is contained in Note 27.

(3) Interest Rate Risk

Interest bearing financial instruments of fixed interest rate and floating interest rate separately make the group be faced with fair value interest rate risk and cash flow interest rate risk. This group decides the proportion of fixed interest rate and floating interest rate instruments according to the market environment and maintains appropriate fixed and floating interest rate instruments combination through regular moderation and monitoring.

42 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments (Continued)

(3) Interest Rate Risk (Continued)

(a) On Dec. 31, the interest accrual financial instruments held by the group and the company are as follows:

This Group

	<u>The Year of 2011</u>	<u>The Year of 2010</u>
	RMB yuan	RMB yuan
Fixed interest rate financial instruments		
Financial assets		
- Monetary capital	115,068.92	132,671.00
Financial liability		
- Short-term loan	185,472,741.62	71,841,042.07
Floating interest rate financial instruments		
Financial assets		
- Monetary capital	423,616,339.17	311,983,326.47
Financial liability		
- Short-term loan	2,687,333,142.64	10,000,000.00
- Long-term loan	1,091,680,000.00	863,000,000.00
- Long-term loan maturing within one year	130,500,000.00	72,000,000.00

This Company

	<u>The Year of 2011</u>	<u>The Year of 2010</u>
	RMB yuan	RMB yuan
Fixed interest rate financial instruments		
Financial assets		
- Monetary capital	74,857.08	77,841.84
Financial liability		
- Short-term loan	155,472,741.62	61,841,042.07
Floating interest rate financial instruments		
Financial assets		
- Monetary capital	348,261,579.05	235,869,396.52
Financial liability		
- Short-term loan	2,612,333,142.64	-
- Long-term loan	1,091,680,000.00	863,000,000.00
- Long-term loan maturing within one year	130,500,000.00	72,000,000.00

## 42 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments (Continued)

### (3) Interest Rate Risk (Continued)

#### Sensibility Analysis

By Dec. 31, 2011, in case of other variables constant, suppose that interest rate changes 40 base points, and this will lead to separate increment/ reduction of the group and the company's owners' rights and interests by RMB 12,470,798.36 yuan and RMB 12,381,862.64 yuan (the year of 2010: RMB 2,418,961.81 yuan and RMB 2,587,303.59 yuan), separate net profit increment/ reduction by RMB 12,470,798.36 yuan and RMB 12,381,862.64 yuan (the year of 2010: RMB 2,418,961.81 yuan and RMB 2,587,303.59 yuan).

As for financial instruments which are held on the balance sheet date, and make the group or the company is faced with fair value interest rate risk, influences on net profit and owners' rights and interests in the above sensibility analysis are impacts generated after assumption of interest rate change on the balance sheet date and re-measurement of above-mentioned financial instruments on the basis of new interest rate. As for floating interest rate non-deriving instruments which are held on the balance sheet date, and make the group or the company is faced with cash flow interest rate risk, influences on net profit and owners' rights and interests in the above sensibility analysis are the above-mentioned interest rate change's impacts on interest expenses or income which is estimated on an annual basis. Last year's analysis is based on the same assumption and method.

### (4) Foreign Exchange Risk

As for account receivables and account payables which are not valuated with recording currency, in case of short-term unbalanced situation, this group will buy and sell foreign currencies according to market exchange rate in necessity so as to insure of maintaining net risk exposure on a acceptable level.

- (a) On Dec. 31, this group's foreign exchange risk exposures of each foreign currency assets liability items are as follows. In consideration of the presentation, risk exposure amount will be displayed in RMB, and amortized computation will be conducted in the spot rate on balance sheet date.

<u>This Group</u>	<u>The Year of 2011</u>					RMB yuan
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound	
Monetary capital	48,317,021.93	81,917,912.78	777,047.03	9,917,967.40	-	
Account receivables	3,818,244.58	2,743,355.77	-	-	-	
Short-term loan	(388,341,164.26)	-	(19,464,720.00)	-	-	
Account payables	(10,133,011.57)	(170,313.977.99)	(10,115,302.52)	-	(34,060.14)	
Exposure net amount of balance sheet	(346,338,909.32)	(85,652,709.44)	(28,802,975.49)	(9,917,967.40)	(34,060.14)	



## 42 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments (Continued)

## (4) Foreign Exchange Risk (Continued)

This Group	The Year of 2010				
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound
Monetary capital	674,481.06	9,915,240.82	209,701.83	18,401,473.41	-
Account receivables	184,965,503.58	22,905,340.86	-	-	-
Short-term loan	-	-	(61,841,042.07)	-	-
Account payables	(1,647,457.82)	(4,374,431.08)	(11,146,626.46)	-	(20,666.31)
Exposure net amount of balance sheet	183,992,526.83	28,446,150.60	(72,777,966.71)	18,401,473.41	(20,666.31)

This Company	The Year of 2011				
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound
Monetary capital	48,287,162.09	63,497,250.33	695,943.87	9,917,967.40	-
Account receivables	3,818,244.58	-	-	-	-
Short-term loan	(388,341,164.26)	-	(19,464,720.00)	-	-
Account payables	(1,136,236.66)	(168,918,704.99)	(8,291,004.97)	-	(34,060.14)
Exposure of balance sheet	(337,371,994.25)	(105,421,454.66)	(27,059,781.10)	9,917,967.40	(34,060.14)

This Company	The Year of 2010				
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound
Monetary capital	643,128.01	545,643.98	128,441.75	18,401,473.41	-
Account receivables	184,965,503.58	-	-	-	-
Short-term loan	-	-	(61,841,042.07)	-	-
Account payables	(709,415.88)	(3,581,096.21)	(8,307,054.84)	-	(20,666.31)
Exposure of balance sheet	184,899,215.72	(3,035,461.23)	(70,019,655.16)	18,401,473.41	(20,666.31)

(b) The Group and The Company's Applicable Exchange Rate Analysis of RMB against Foreign Currencies Is as Follows:

	Average Exchange Rate	This Year's Amount		
		Medial Exchange rate on the Report Date		
	Average Exchange Rate	Last Year's Amount		
		Medial Exchange rate on the Report Date		
U.S. Dollar	6.4618	6.3009	6.7255	6.6227
Euro	8.4845	8.1625	9.3018	8.8065
Japanese Yen	0.0812	0.0811	0.0776	0.0813
Hong Kong Dollar	0.8308	0.8107	0.8657	0.8509
Pound	9.9649	9.7116	10.5981	10.2182

## (4) Foreign Exchange Risk (Continued)

## (c) Sensibility Analysis

Assume that except the exchange rate, other risk variables remain constant, exchange rate changes against U.S. Dollar, Euro, Japanese Yen and Hong Kong Dollar, which were made by the group and the company on Dec. 31 and caused appreciation of the RMB by 1%, would lead to the following increment (reduction) situations of owners' rights and interests and net profit. This influence is displayed in RMB after amortized computation according to the spot rate on balance sheet date.

	Owners' Rights and Interests		Profit and loss	
	This Group Equivalent RMB	This Company Equivalent RMB	This Group Equivalent RMB	This Company Equivalent RMB
Dec. 31, 2011				
U.S. Dollar	2,934,913.81	2,867,661.95	2,934,913.81	2,867,661.95
Euro	747,816.78	896,082.36	747,816.78	896,082.36
Japanese Yen	243,082.10	230,008.14	243,082.10	230,008.14
Hong Kong Dollar	(84,302.72)	(84,302.72)	(84,302.72)	(84,302.72)
Pound	289.51	289.51	289.51	289.51
Dec. 31, 2010				
U.S. Dollar	(1,839,925.27)	(1,848,992.16)	(1,564,843.17)	(1,571,643.33)
Euro	(94,454.64)	30,354.61	(67,805.52)	25,801.42
Japanese Yen	727,779.67	700,196.55	615,854.41	595,167.07
Hong Kong Dollar	(184,014.73)	(184,014.73)	(156,412.52)	(156,412.52)
Pound	206.66	206.66	175.66	175.66

On Dec.31, under the premise of assuming other variables remaining constant, RMB exchange rate changes against U.S. Dollar, Euro, Japanese Yen and Hong Kong Dollar caused depreciation of the RMB by 1%, would lead to the changes of owners' rights and interests as well as profit and loss, which are of the same amount but different direction with amounts displayed in the above form.

The above-mentioned sensibility analysis are obtained by assuming exchange rate changes on the balance sheet date and re-measuring financial instruments which are held by the group and faced with foreign exchange risk on the basis of new exchange rate. Above analysis do not include amortized computation differences of foreign currency report forms. Last year's analysis is based on the same assumption and method.

## 43 Commitments

### (a) Capital Commitment

On Dec. 31, the group and the company's capital commitments are displayed as follows:

<u>This group</u>	<u>The Year of 2011</u>	<u>The Year of 2010</u>
	RMB yuan	RMB yuan
Already reserved contract		
House and buildings	639,868,707.63	716,797,644.80
Machinery equipment	130,614,302.64	382,581,514.00
Other	159,778,924.64	17,406,332.03
Total	930,263,152.91	1,116,785,490.83
<u>This Company</u>	<u>The Year of 2011</u>	<u>The Year of 2010</u>
	RMB yuan	RMB yuan
Already reserved contract		
House and buildings	614,598,316.65	716,797,644.80
Machinery equipment	111,260,610.97	330,086,939.60
Total	725,860,145.62	1,046,884,584.40

### (b) Operating Lease Commitment

According to irrevocable relevant operating lease agreement, the group and the company's payable lowest lease payment after Dec. 31 is as follows:

<u>The Group and the Company</u>	<u>The Year of 2011</u>	<u>The Year of 2010</u>
	RMB yuan	RMB yuan
Within one year (including one year)	515,900.00	
Total	515,900.00	



#### 44 Contingency

As a shareholder of our company, Jilin Province Golden Bean Industry Group Co., Ltd held 57% of our company's share by Dec. 31, 2011. In Jun. 2011, Jilin Province Golden Bean Industry Group Co., Ltd started a lawsuit against our company and the parent company—China CNR Corporation Limited of our company, insisted that the resolutions of three shareholders meeting which are separately held in the year of 2008, 2009 and 2010 were invalid and asked for compensation of economic losses. First instance of this lawsuit had opened a court session on Aug. 1<sup>st</sup>, 2011; Judgment is yet to be made. Our company is not able to estimate the judgment at the moment.

#### 45 Related Parties and Their Transactions

- (1) Information concerns the parent company and ultimate holding company of this company is as follows:

Company Name

China CNR Corporation Limited

Registration Place

Beijing

Business Nature

Manufacturing Business

Registered Capital

RMB yuan

8,300,000,000.00

Shareholding Ratio of This Company

93.29%

Voting Power Ratio of This Company

93.29%

Relationship with This Company

Parent Company

The ultimate holding company of our company is China Northern Locomotive and Vehicle Industry Group Corporation.

Registered capital and its change of major related parties with which there are controlling relationships:

Company Name

China Northern Locomotive and Vehicle Industry Group Corporation

<u>Year-beginning Balance</u>	<u>This Year's Increment</u>	<u>This Year's Reduction</u>	<u>Year-end Balance</u>
RMB yuan	RMB yuan	RMB yuan	RMB yuan

8,164,727,000.00	1,695,776,379.93	-	9,860,503,379.93
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Company Name

China CNR Corporation Limited

<u>Year-beginning Balance</u>	<u>This Year's Increment</u>	<u>This Year's Reduction</u>	<u>Year-end Balance</u>
RMB yuan	RMB yuan	RMB yuan	RMB yuan
8,300,000,000.00	-	-	8,300,000,000.00

Parent Company's shareholding or rights and interests and its change:

Enterprise Name

China CNR Corporation Limited

Year-beginning Amount

Amount of Money    %

RMB yuan

1,535,679,251.00    73.85%

This Year's Increment

Amount of Money    %

RMB yuan

-                      -

This Year's Reduction

Amount of Money    %

RMB yuan

-                      -

Year-end Amount

Amount of Money    %

RMB yuan

1,535,679,251.00    73.85%

(2) See Note 5 for information concerning subsidiaries of this company.

(3) See Note 13 for information concerning important cooperative, joint companies.

45 Related Party and Its Transactions (continued)

(4) Transactions between the Group and the Company and Key Management Personnel

	<u>The Group</u>		<u>The Company</u>	
	<u>The sum this year</u>	<u>The sum last year</u>	<u>The sum this year</u>	<u>The sum last year</u>
	RMB yuan	RMB yuan	RMB yuan	RMB yuan
The Remuneration of Key Management Personnel	9,047,354.30	6,615,360.00	8,592,644.34	5,886,960.00

The transactions above with key management personnel is done according to the normal commercial terms or the relevant agreements .

(5) Transactions between the Group , the Company and the related parties in addition to the key management personnel :

(a) The amount of the transaction of the related parties is as follows :

<u>The Group</u>	<u>This Year</u>	<u>Last Year</u>
	RMB yuan	RMB yuan
Goods on Sales	1,039,157,544.99	750,124,987.27
The purchased Materials	3,122,772,634.77	1,362,029,732.27
Purchase of Fixed Assets	1,575,134.37	-
The Loans from the Related Party	4,241,380,000.00	5,345,000,000.00
The Return of the Related Party Loans	2,594,200,000.00	3,400,000,000.00
Interest Income	-	113,888.89
Interest Expense	164,669,243.10	64,624,446.66
Paying Dividends	65,528,561.19	53,041,644.53
Fixed Assets under Financing Lease	-	62,293,126.27
Interest Expenses .of Fixed Assets under Financing Lease	3,753,175.54	884,904.99
Rent Expenses .of Fixed Assets under Financing Lease	14,218,415.89	-
Rendering of Services	9,425,387.99	12,839,900.00
Receiving Labor	98,708,269.83	239,918,584.03
The Acceptance of the Related Party Guarantee	-	6,787,737.60



45 Related Party and Its Transactions (continued)

(5) Transactions between the Group , the Company and the related parties in addition to the key management personnel :

(a) The amount of the transaction of the related parties is as follows (continued) :

<u>The Group</u>	<u>This Year</u>	<u>Last Year</u>
	<u>RMB yuan</u>	<u>RMB yuan</u>
Goods on Sales	1,615,770,091.62	919,820,078.86
The purchased Materials	3,531,646,616.52	1,401,309,102.27
Purchase of Fixed Assets	1,575,134.37	-
The Loans from the Related Party	4,241,380,000.00	4,335,000,000.00
The Return of the Related Party Loans	2,594,200,000.00	3,400,000,000.00
Interest Income	-	113,888.89
Interest Expense	164,669,243.10	36,946,315.41
Paying Dividends	65,528,561.19	53,041,644.53
Fixed Assets under Financing Lease	-	62,293,126.27
Interest Expenses .of Fixed Assets under Financing Lease	3,753,175.54	884,904.99
Rent Expenses .of Fixed Assets under Financing Lease	14,218,415.89	-
Rendering of Services	4,721,187.50	11,610,000.00
Receiving Labor	92,556,288.79	230,840,504.63
The Acceptance of the Related Party Guarantee	-	6,787,737.60

**45 The Related Party and Its Transactions (continued)**

(5) Transactions between the Group , the Company and the related parties in addition to the key management personnel (continued) :

(b) The transactions balance between the related parties on December 31th is as follows (continued) :

<u>The Company</u>	<u>The balance at the end of the year</u>	<u>The balance at the beginning of the year</u>
	<b>RMB yuan</b>	<b>RMB yuan</b>
The Receivable Notes	20,000,000.00	-
The Receivable Accounts	364,766,877.30	48,363,101.67
The Receivable Dividends	60,000,000.00	-
-Prepayments	251,785,625.05	416,994,972.60
Other Accounts Receivables-	-	832,147.58
Bad Debit Reserve	429,933.83	214,966.91
Short-term Borrowing	1,360,000,000.00	-
Bills Payable	437,692,802.72	42,387,297.83
Accounts Payable	1,112,626,132.30	230,450,541.08
Account Collected in Advance	100,000,000.00	189,707,265.14
Accrued Interest	5,514,540.44	2,101,008.47
Other Payables	8,400,891.35	19,410,987.47
Funded Debt	1,091,680,000.00	863,000,000.00
Dividends Payable	316,386,013.58	24,285,517.95
Accrued Wages	15,712,155.82	28,085,848.70
Non-current Liabilities due within One Year	141,796,490.26	82,720,853.86
Long-term Account Payable	38,712,816.45	49,753,612.21
Special Payable	75,890,000.00	-
The Acceptance of the Balance of the	3,825,019.30	3,566,668.74
Related Party Guarantees		

**45 The Related Party and Its Transactions (continued)**

(5) Transactions between the Group , the Company and the related parties in addition to the key management personnel (continued) :

(c) The transactions balance between the related parties on December 31th is as follows (continued) :

<u>The Company</u>	<u>The balance at the end of the year</u>	<u>The balance at the beginning of the year</u>
	<b>RMB yuan</b>	<b>RMB yuan</b>
The Receivable Notes	20,000,000.00	-
The Receivable Accounts	830,303,576.51	162,517,584.67
The Receivable Dividends	60,000,000.00	-
-Prepayments	251,785,625.05	637,885,587.50
Other Accounts Receivables-	-	832,147.58
Bad Debit Reserve	429,933.83	214,966.91
Short-term Borrowing	1,360,000,000.00	-
Bills Payable	420,465,440.92	42,387,297.83
Accounts Payable	1,079,826,429.46	276,625,242.01
Account Collected in Advance	100,000,000.00	162,022,413.11
Accrued Interest	5,514,540.44	2,101,008.47
Other Payables	8,400,891.35	23,227,829.78
Funded Debt	1,091,680,000.00	863,000,000.00
Dividends Payable	316,386,013.58	24,285,517.95
Accrued Wages	15,712,155.82	28,085,848.70
Non-current Liabilities due within One Year	141,796,490.26	82,720,853.86
Long-term Account Payable	38,712,816.45	49,753,612.21
Special Payable	75,890,000.00	-
The Acceptance of the Balance of the	3,825,019.30	3,566,668.74
Related Party Guarantees		

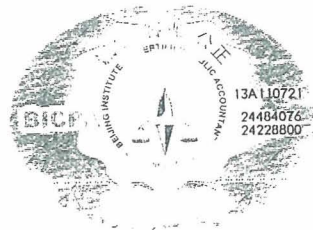




KPMG Huazhen  
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China

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Internet 网址 kpmg.com/cn



## 审计报告

毕马威华振审字第 1300591 号

长春轨道客车股份有限公司董事会:

我们审计了后附的第 1 页至第 96 页的长春轨道客车股份有限公司 (以下简称“贵公司”) 财务报表, 包括 2012 年 12 月 31 日的合并资产负债表和资产负债表、2012 年度的合并利润表和利润表、合并现金流量表和现金流量表、合并所有者权益变动表和所有者权益变动表以及财务报表附注。

### 一、管理层对财务报表的责任

编制和公允列报财务报表是贵公司管理层的责任, 这种责任包括: (1) 按照中华人民共和国财政部颁布的企业会计准则的规定编制财务报表, 并使其实现公允反映; (2) 设计、执行和维护必要的内部控制, 以使财务报表不存在由于舞弊或错误导致的重大错报。

### 二、注册会计师的责任

我们的责任是在执行审计工作的基础上对财务报表发表审计意见。我们按照中国注册会计师审计准则的规定执行了审计工作。中国注册会计师审计准则要求我们遵守中国注册会计师职业道德守则, 计划和执行审计工作以对财务报表是否不存在重大错报获取合理保证。

审计工作涉及实施审计程序, 以获取有关财务报表金额和披露的审计证据。选择的审计程序取决于注册会计师的判断, 包括对由于舞弊或错误导致的财务报表重大错报风险的评估。在进行风险评估时, 注册会计师考虑和公允列报相关的内部控制, 以设计恰当的审计程序, 但目的并非对内部控制的有效性发表意见。审计工作还包括评价管理层选用会计政策的恰当性和作出会计估计的合理性, 以及评价财务报表的总体列报。

我们相信, 我们获取的审计证据是充分、适当的, 为发表审计意见提供了基础。

审计报告（续）

毕马威华振审字第 1300591 号

三、审计意见

我们认为，贵公司财务报表在所有重大方面按照中华人民共和国财政部颁布的企业会计准则的规定编制，公允反映了贵公司 2012 年 12 月 31 日的合并财务状况和财务状况以及 2012 年度的合并经营成果和经营成果及合并现金流量和现金流量。



中国注册会计师

雷江

雷江



中国 北京

杨文婷

杨文婷



二〇一三年四月九日

# 公 证 书

(2013)吉长信维证外字第 17044 号

申请人: 长春轨道客车股份有限公司, 企业法人营业执照注册号: 2200000000093577, 住所: 长春市长客路 2001 号。

法定代表人: 董晓峰, 男, 一九五四年十二月一日出生, 公民身份号码: 220103195412013712。

公证事项: 复印件与原件相符

兹证明前面的复印件与《审计报告》的原件相符。

中华人民共和国吉林省长春市信维公证处

公证员: 张英姿

二〇一三年六月八日





# NOTARIAL CERTIFICATE

(Translation)

(2013) J C X W Z W Zi, No.17044

Applicant: Changchun Railway Vehicles Co., Ltd.,  
Registration No. of Business License of Legal Entity:  
220000000093577, Address: No.2001, Changke Road, Changchun  
City.

Legal Representative: Dong Xiaofeng, male, was born on  
December 1, 1954, I.D. Card No.: 220103195412013712.

Notarized Matter: THE DUPLICATE COPY IS IN CONFORMITY WITH  
THE ORIGINAL COPY

This is to certify that the duplicate copy attached hereto  
is in conformity with the original copy of AUDIT REPORT.

Notary: Zhang Yingzi

Xinwei Notary Public Office of  
Changchun City, Jilin Province  
The People's Republic of China  
June 8, 2013

**CHANGCHUN RAILWAY VEHICLES CO., LTD**

**ANNUAL FINANCIAL STATEMENTS**  
**FROM JAN. 1<sup>ST</sup>, 2012 TO DEC. 31<sup>ST</sup>, 2012**

KPMG Huazhen Telephone: +86 (10) 8508 5000  
(Special General Partnership) Fax : +86 (10) 8518 5111  
8<sup>th</sup> floor, Tower E2 Internet : kpmg.com/cn  
Oriental Plaza  
1 East Chang An Avenue  
Beijing 100738  
China

## Audit Report

KPMG HHUAZHEN-A AR No.1300591

Board of Directors of Changchun Railway Vehicles Co., Ltd.,

We have audited financial statements of Changchun Railway Vehicles Co., Ltd (hereinafter referred to as “Your Company”) enclosed with page no. from 1 to 96, including consolidated balance sheet and balance sheet on Dec. 31<sup>st</sup>, 2012, consolidated profit statement and profit statement, consolidated cash flow statement and cash flow statement, consolidated statement of changes in owners’ equity and statement of changes in owners’ equity, and notes to financial statements in 2012.

### **I. Responsibility of Your Company’s Management to Financial Statements**

Preparing and fairly presenting financial statements is the responsibility of your company’s management. The responsibility includes: (1) to prepare financial statements as per stipulations in Accounting Standards for Business Enterprises issued by Ministry of Finance of the People’s Republic of China, and make them realize fair reflection; (2) design, implementation and maintenance of necessary internal control, so as to avoid material misstatements caused by fraud and error in financial statements.

### **II. The Responsibility of Certified Public Accountant**

Our responsibility is to give auditing opinions for financial statements on the basis of audit implementation. We have implemented audit according to stipulations of Auditing Standards of Chinese Certified Public Accountant. Auditing Standards of Chinese Certified Public Accountant requires us to follow Professional Code of Ethics of Chinese Certified Public Accountant, to plan and implement audit work, so as to obtain reasonable guarantee that there are no material misstatements in financial statements.

The audit work involves implementation of auditing procedure, so as to obtain audit evidences for financial statements amounts concerned and disclosure. The auditing procedure selected depends on the decision of certified public accountant, including risk estimation for material misstatements



caused by fraud and error in financial statements. When we make risk estimation, certified public accountant considers internal control related to fair presentation, so as to design appropriate auditing procedure, however, the purpose is not to propose opinions for the effectiveness of internal control. The audit work also include to evaluate appropriateness of accounting policies chosen by management and rationality of accounting estimation made by management, and evaluate the overall presentation of financial statements.

We believe that auditing evidences obtained by us are sufficient and appropriate, which provides basis for giving auditing opinions.

KPMG Huazhen (Special General Partnership), a special general partnership in China and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.



## **Audit Report (Continued)**

KPMG HUAZHEN-A AR No.1300591

### **III. Auditing Opinions**

We hold that your company's financial statements have been prepared upon stipulations in Accounting Standards for Business Enterprises issued by Ministry of Finance of the People's Republic of China, and have fairly reflected your company's consolidated financial position and financial position on Dec, 31<sup>st</sup>, 2012, consolidated operating results and operating results, consolidated cash flow and cash flow in 2012 in all major aspects.

KPMG Huazhen  
(Special General Partnership)

Chinese Certified Public Accountants

Lei Jiang

Beijing, China

Yang Wenting

Date: April 9<sup>th</sup>, 2013

Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Assets			
Current Assets			
Monetary Funds	6	509,903,635.85	423,731,408.09
Notes Receivable	7	37,988,433.33	76,680,704.00
Accounts Receivable	8	5,203,936,418.29	3,236,355,129.54
Prepayments	9	979,879,926.81	1,538,875,528.29
Dividends Receivable		-	60,000,000.00
Other Receivables	10	51,217,673.46	119,070,341.71
Inventories	11	8,884,032,914.88	12,917,752,643.36
Other Current Assets	12	665,584.72	56,336,038.54
Total Current Assets		15,667,624,587.34	18,428,801,793.53
		.....	.....
Non-current Assets			
Long-term Equity Investment	13	188,749,675.46	178,595,957.92
Fixed Assets	14	6,221,645,718.68	3,967,786,217.41
Construction in Progress	15	926,864,280.75	2,799,536,554.02
Construction Materials		54,690,854.43	14,733,131.29
Intangible Assets	16	1,384,530,271.86	1,170,747,568.26
Development Expenditure		-	214,592.15
Long-term Unamortized Expenses		-	933,040.75
Deferred Income Tax Assets	17	70,179,141.78	39,669,135.58
Other non-current Assets		107,588,404.00	167,108,404.00
Total Non-current Assets		8,954,248,346.96	8,339,324,601.38
		.....	.....
Total Assets		<u>24,621,872,934.30</u>	<u>26,768,126,394.91</u>

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Liabilities and Owner's Equity			
Current Liabilities			
Short-term Loan	19	1,230,500,000.00	2,872,805,884.26
Notes Payable	20	2,010,970,150.08	2,002,849,370.36
Accounts Payable	21	7,320,373,153.13	7,758,966,828.46
Advances Received	22	3,152,744,223.39	4,189,465,755.17
Payroll Payable	23	173,465,285.97	196,815,255.20
Taxes payable	4(3)	379,701,529.92	19,136,459.26
Interests Payable		8,006,648.85	5,726,930.58
Dividends Payable		1,305,929,249.91	316,386,013.58
Others Payable	24	531,611,520.60	328,936,627.41
Non-current Liabilities Due			
Within One Year	25	144,819,542.32	167,242,863.36
Other Current Liabilities	26	251,000,731.87	160,038,037.39
Total Current Liabilities		16,509,122,036.04	18,018,370,025.03
		.....	.....
Long-term Liabilities			
Long-term Loan	27	996,420,000.00	1,091,680,000.00
Long-term Accounts Payable	28	123,842,139.86	911,634,191.67
Special Accounts Payable		75,890,000.00	75,890,000.00
Other Non-current Liabilities	29	614,546,391.96	478,756,141.89
Total Non-current Liabilities		1,810,698,531.82	2,557,960,333.56
		.....	.....
Total Liabilities		18,319,820,567.86	20,576,330,358.59
		.....	.....

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Liabilities and Owner's Equity (Continued)			
Owner's Equity			
Paid-in Capital	30	2,079,387,600.00	2,079,387,600.00
Capital Surplus	31	2,490,643,442.26	2,489,729,081.80
Surplus Reserves	32	340,372,202.68	205,483,379.66
Undistributed Profit	33	1,311,827,708.34	1,350,616,420.18
Total Owner's Equity Attributable to the Parent Company		6,222,230,953.28	6,125,216,481.64
Minority Shareholder's Equity		79,821,413.16	66,579,554.68
Total Owner's Equity		6,302,052,366.44	6,191,796,036.32
Total Liabilities and Owner's Equity		24,621,872,934.30	26,768,126,394.91

This financial statement has been approved by management on April 9<sup>th</sup>, 2013.

Dong Xiaofeng	Lu Xiwei	Di Jinying	Cao Xuming
Legal Representative	The Head in Charge of Financial Work	Financial Controller	The Head of Accounting Body (Company Seal)
(Signature and Seal)	(Signature and Seal)	(Signature and Seal)	(Signature and Seal)

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Balance Sheet  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Assets			
Current Assets			
Monetary Funds	6	381,892,665.28	348,336,436.13
Notes Receivable	7	22,100,000.00	66,680,704.00
Accounts Receivable	8	5,152,925,539.65	3,313,978,622.91
Prepayments	9	977,380,393.93	1,531,410,313.97
Dividends Receivable		-	60,000,000.00
Other Receivables	10	47,489,822.03	113,117,090.36
Inventories	11	8,712,757,463.36	12,702,930,399.99
Other Current Assets	12	-	30,880,880.58
Total Current Assets		15,294,545,884.25	18,167,334,447.94
Non-current Assets			
Long-term Equity Investment	13	317,359,904.17	306,993,063.57
Fixed Assets	14	5,810,503,986.12	3,655,390,453.43
Construction in Progress	15	923,690,691.19	2,730,140,901.68
Construction Materials		54,690,854.43	14,733,131.29
Intangible Assets	16	1,319,476,399.93	1,129,156,563.84
Long-term Unamortized Expenses		-	898,040.75
Deferred Income Tax Assets	17	54,947,873.35	34,409,135.18
Other Non-current Assets		107,588,404.00	142,416,164.00
Total Non-current Assets		8,588,258,113.19	8,014,137,453.74
Total Assets		<u>23,882,803,997.44</u>	<u>26,181,471,901.68</u>

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Liabilities and Owner's Equity			
Current Liabilities			
Short-term Loan	19	1,070,000,000.00	2,767,805,884.26
Notes Payable	20	1,930,241,837.12	1,896,865,044.68
Accounts Payable	21	6,939,080,361.19	7,492,193,244.08
Advances Received	22	3,147,505,932.90	4,189,118,356.90
Payroll Payable	23	165,649,438.55	193,324,740.63
Taxes payable	4(3)	374,639,456.01	12,610,610.86
Interests Payable		7,704,231.96	5,514,540.44
Dividends Payable		1,305,929,249.91	316,386,013.58
Others Payable	24	516,729,936.31	310,336,223.60
Non-current Liabilities Due			
Within One Year	25	144,819,542.32	167,242,863.36
Other Current Liabilities	26	249,430,137.17	159,655,707.32
Total Current Liabilities		<u>15,851,730,123.44</u>	<u>17,511,053,229.71</u>
		.....	.....
Long-term Liabilities			
Long-term Loan	27	996,420,000.00	1,091,680,000.00
Long-term Accounts Payable	28	123,842,139.86	911,634,191.67
Special Accounts Payable		75,890,000.00	75,890,000.00
Other Non-current Liabilities	29	610,242,004.12	473,703,958.21
Total Non-current Liabilities		<u>1,806,394,143.98</u>	<u>2,552,908,149.88</u>
		.....	.....
Total Liabilities		<u>17,658,124,267.42</u>	<u>20,063,961,379.59</u>
		.....	.....

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Balance Sheet (Continued)  
Dec. 31<sup>st</sup>, 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Liabilities and Owner's Equity (Continued)			
Owner's Equity			
Paid-in Capital	30	2,079,387,600.00	2,079,387,600.00
Capital Surplus	31	2,450,041,734.91	2,449,637,374.45
Surplus Reserves	32	340,372,202.68	205,483,379.66
Undistributed Profit	33	1,354,878,192.43	1,383,002,167.98
Total Owner's Equity		<u>6,224,679,730.02</u>	<u>6,117,510,522.09</u>
Total Liabilities and Owner's Equity		<u>23,882,803,997.44</u>	<u>26,181,471,901.68</u>

This financial statement has been approved by management on April 9<sup>th</sup>, 2013.

Dong Xiaofeng	Lu Xiwei	Di Jinying	Cao Xuming
Legal Representative	The Head in Charge of Financial Work	Financial Controller	The Head of Accounting Body(Company Seal)
(Signature and Seal)	(Signature and Seal)	(Signature and Seal)	(Signature and Seal)

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Consolidated Profit Statement

Year 2012

(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Operating Revenue	34	22,842,078,727.22	23,389,398,704.28
Less: Operating Costs		18,862,602,193.87	19,940,913,642.21
Sales Taxes and Surcharges		116,423,724.07	17,612,592.71
Sales Expenses		591,677,835.82	462,470,692.62
General and Administrative Expenses		1,285,977,095.94	1,094,731,189.93
Financial Expenses	35	393,331,950.12	435,878,989.44
Assets Impairment Loss	36	102,488,273.94	28,120,560.97
Plus: Net Investment Income/(Loss)	37	353,717.54	(17,650,090.97)
(Thereof: Income / (Loss) from Investment in Associated Enterprises and Joint Ventures)		<u>353,717.54</u>	<u>(17,926,824.97)</u>
Operating Profit		1,489,931,371.00	1,392,020,945.43
Plus: Non-operating Revenue	38	140,991,367.72	81,056,745.16
Less: Non-operating Expenditures	39	80,852,841.39	46,551,761.35
(Thereof: Non-current Assets Disposal Loss)		22,549.88	-
Total Profit		<u>1,550,069,897.33</u>	<u>1,426,525,929.24</u>
Less: Income Tax	40	199,094,544.98	197,031,393.71
Net Profit		<u>1,350,975,352.35</u>	<u>1,229,494,535.53</u>
Net Profit Attributable to Owners of Parent Company		<u>1,338,223,493.87</u>	<u>1,242,123,382.69</u>
Minority Interest Income		12,751,858.48	(12,628,847.16)
Other Comprehensive Income		-	-
Total Comprehensive Income		<u>1,350,975,352.35</u>	<u>1,229,494,535.53</u>
Comprehensive Income Attributable to Owners of Parent Company		<u>1,338,223,493.87</u>	<u>1,242,123,382.69</u>
Comprehensive Income Attributable to Minority Shareholders		12,751,858.48	(12,628,847.16)

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.

Profit Statement

Year 2012

(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Operating Revenue	34	23,384,932,352.62	23,479,429,726.02
Less: Operating Costs		19,502,802,010.26	20,111,360,567.19
Sales Taxes and Surcharges		114,880,286.46	14,931,123.73
Sales Expenses		565,682,899.27	445,628,009.00
General and Administrative Expenses		1,227,291,375.96	1,046,126,825.07
Financial Expenses	35	381,480,953.05	431,479,155.13
Assets Impairment Loss	36	101,020,931.29	29,623,265.87
Plus: Net Investment Income/ (Loss)	37	1,166,840.60	(15,953,938.10)
(Thereof: Income/ (Loss) from Investment in Associated Enterprises and Joint Ventures)		1,166,840.60	(17,926,824.97)
Operating Profit		1,492,940,736.93	1,384,326,841.93
Plus: Non-operating Revenue	38	137,814,220.72	75,299,459.58
Less: Non-operating Expenditures	39	80,237,778.98	46,269,957.85
Total Profit		1,550,517,178.67	1,413,356,343.66
Less: Income Tax	40	201,628,948.51	186,368,440.36
Net Profit		1,348,888,230.16	1,226,987,903.30
Other Comprehensive Income		-	-
Total Comprehensive Income		1,348,888,230.16	1,226,987,903.30

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Consolidated Cash Flow Statement

Year 2012

(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Cash Flows from Operating Activities:			
Cash Received from Sale of Goods or Rendering of Service		22,687,174,397.72	19,595,283,043.35
Refund of Tax and Levies		142,937,445.37	106,878,193.44
Other Cash Received Relating to Operating Activities		197,623,244.25	398,665,530.08
Sub-total Cash Inflows from Operating Activities		23,027,735,087.34	20,100,826,766.87
Cash Paid for Goods and Services		(15,327,087,812.79)	(19,436,950,066.41)
Cash Paid to and on Behalf of Employees		(1,738,189,112.49)	(1,502,425,009.05)
Cash Payments for All Taxes		(1,000,743,827.07)	(411,196,266.72)
Other Cash Paid Relating to Operating Activities		(1,132,119,792.59)	(709,754,271.41)
Sub-total Cash Outflows from Operating Activities		(19,198,140,544.94)	(22,060,325,613.59)
Net Cash Flows from Operating Activities	41(1)	3,829,594,542.40	(1,959,498,846.72)
Cash Flows from Investing Activities			
Cash Received from Investment Return		-	276,734.00
Net Cash Received from Disposal of Fixed Assets, Intangible Assets and Other Long-term Assets		82,307.30	206,853.46
Other Cash Received Relating to Investing Activities		170,340,000.00	-
Sub-total Cash Inflows from Investing Activities		170,422,307.30	483,587.46
Cash Paid to Acquire Fixed Assets, Intangible Assets and Other Long-term Assets		(603,073,429.67)	(1,542,682,362.71)
Cash Paid to Acquire Investment		(9,800,000.00)	-
Sub-total Cash Outflows from Investing Activities		(612,873,429.67)	(1,542,682,362.71)
Net Cash Flows from Investing Activities		(442,451,122.37)	(1,542,198,775.25)

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Cash Flow Statement (Continued)  
Year 2012  
(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Cash Flows from Financing Activities			
Cash Received from Capital Contribution		-	124,890,000.00
Thereof: Cash Received by Subsidiaries			
from Minority Shareholders' Investment		-	49,000,000.00
Cash Received from Loan		11,154,503,632.81	9,859,515,559.73
Other Cash Received Relating to Financing Activities		1,000,000.00	809,045,380.00
Sub-total Cash Inflows from Financing Activities		11,155,503,632.81	10,793,450,939.73
Cash Repaid for Debts		(12,982,409,672.37)	(6,738,822,195.26)
Cash Paid for Distribution of Dividends, Profit			
or Repaid for Loan Interests		(603,088,006.72)	(361,348,722.87)
Other Cash Payments Relating to Financing Activities		(856,946,818.04)	(67,167,575.58)
Sub-total Cash Outflows from Financing Activities		(14,442,444,497.13)	(7,167,338,493.71)
Net Cash Flows from Financing Activities		(3,286,940,864.32)	3,626,112,446.02
Effect of Foreign Exchange Rate Changes			
on Cash and Cash Equivalents		(14,030,327.95)	(12,799,413.43)
Net Increase in Cash and Cash Equivalents	41(3)	86,172,227.76	111,615,410.62
Plus: Cash and Cash Equivalents Balance			
at the Beginning of the Year		423,731,408.09	312,115,997.47
Cash and Cash Equivalents Balance			
at the End of the Year	41(4)	509,903,635.85	423,731,408.09

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.

Cash Flow Statement

Year 2012

(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Cash Flows from Operating Activities:			
Cash Received from Sale of Goods or			
Rendering of Service		22,670,437,222.82	19,587,910,873.16
Refund of Tax and Levies		142,054,323.23	105,645,564.45
Other Cash Received Relating to Operating Activities		195,429,937.14	396,935,494.85
		<hr/>	<hr/>
Sub-total Cash Inflows from Operating Activities		23,007,921,483.19	20,090,491,932.46
		<hr/>	<hr/>
Cash Paid for Goods and Services		(15,467,306,879.00)	(19,554,726,932.10)
Cash Paid to and on Behalf of Employees		(1,689,801,891.54)	(1,473,230,482.78)
Cash Payments for All Taxes		(979,826,703.61)	(381,130,594.60)
Other Cash Paid Relating to Operating Activities		(1,087,959,491.85)	(668,501,649.48)
		<hr/>	<hr/>
Sub-total Cash Outflows from Operating Activities		(19,224,894,966.00)	(22,077,589,658.96)
		<hr/>	<hr/>
Net Cash Flows from Operating Activities	41(1)	3,783,026,517.19	(1,987,097,726.50)
		<hr/>	<hr/>
Cash Flows from Investing Activities			
Cash Received from Investment Recovery		-	29,663,400.03
Cash Received from Investment Return		-	15,035,420.86
Net Cash Received from Disposal of Fixed Assets,			
Intangible Assets and Other Long-term Assets		37,488.80	206,853.46
Other Cash Received Relating to Investing Activities		170,340,000.00	-
		<hr/>	<hr/>
Sub-total Cash Inflows from Investing Activities		170,377,488.80	44,905,674.35
		<hr/>	<hr/>
Cash Paid to Acquire Fixed Assets, Intangible			
Assets and Other Long-term Assets		(565,345,459.51)	(1,378,647,660.52)
Cash Paid to Acquire Investment		(9,200,000.00)	(51,000,000.00)
		<hr/>	<hr/>
Sub-total Cash Outflows from Investing Activities		(574,545,459.51)	(1,429,647,660.52)
		<hr/>	<hr/>
Net Cash Flows from Investing Activities		(404,167,970.71)	(1,384,741,986.17)
		<hr/>	<hr/>

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.

Cash Flow Statement (Continued)

Year 2012

(Monetary Unit: CNY)

	Notes	Year 2012	Year 2011
Cash Flows from Financing Activities			
Cash Received from Capital Contribution		-	75,890,000.00
Cash Received from Loan		10,944,003,632.81	9,685,476,622.37
Other Cash Received Relating to Financing Activities		-	809,045,380.00
Sub-total Cash Inflows from Financing Activities		10,944,003,632.81	10,570,412,002.37
Cash Repaid for Debts		(12,827,409,672.37)	(6,649,783,257.90)
Cash Paid for Distribution of Dividends, Profit or Repaid for Loan Interests		(592,008,165.22)	(357,529,650.69)
Other Cash Payments Relating to Financing Activities		(855,869,901.33)	(67,167,575.58)
Sub-total Cash Outflows from Financing Activities		(14,275,287,738.92)	(7,074,480,484.17)
Net Cash Flows from Financing Activities		(3,331,284,106.11)	3,495,931,518.20
Effect of Foreign Exchange Rate Changes on Cash and Cash Equivalents		(14,018,211.22)	(11,702,607.76)
Net Increase in Cash and Cash Equivalents	41(3)	33,556,229.15	112,389,197.77
Plus: Cash and Cash Equivalents Balance at the Beginning of the Year		348,336,436.13	235,947,238.36
Cash and Cash Equivalents Balance at the End of the Year	41(4)	381,892,665.28	348,336,436.13

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity  
Year 2012

Monetary Unit: CNY

Item	Amount in Current Year							
	Owner's Equity Attributable to Parent Company						Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Special Reserves	Surplus Reserves	Undistributed Profit	Sub-total		
I. The Balance at the End of Last Year	2,079,387,600.00	2,489,729,081.80	-	205,483,379.66	1,350,616,420.18	6,125,216,481.64	66,579,554.68	6,191,796,036.32
Plus: Accounting Policy Alteration	-	-	-			-	-	-
Prior Errors Correction	-	-	-			-	-	-
Others	-	-	-			-	-	-
II. Opening Balance in Current Year	2,079,387,600.00	2,489,729,081.80	-	205,483,379.66	1,350,616,420.18	6,125,216,481.64	66,579,554.68	6,191,796,036.32
III. Increase/Decrease Amount in Current Year	-	914,360.46	-	134,888,823.02	(38,788,711.84)	97,014,471.64	13,241,858.48	110,256,330.12
(I) Net Profit	-	-	-	-	1,338,223,493.87	1,338,223,493.87	12,751,858.48	1,350,975,352.35
(II) Other Comprehensive Income	-	-	-	-	-	-	-	-
Sub-total of above (I) and (II)	-	-	-	-	1,338,223,493.87	1,338,223,493.87	12,751,858.48	1,350,975,352.35
(III) Capital Contributed/Decreased by Owners	-	914,360.46	-	-	-	914,360.46	490,000.00	1,404,360.46
1. Capital Contributed by Owners	-	-	-	-	-	-	-	-
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	404,360.46	-	-	-	404,360.46	-	404,360.46
3. Others	-	510,000.00	-	-	-	510,000.00	490,000.00	1,000,000.00

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount in Current Year							
	Owner's Equity Attributable to Parent Company						Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Special Reserves	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Appropriation and Use of Special Reserves	-	-	-	-	-	-	-	-
1. Appropriation of Special Reserves	-	-	34,990,455.06	-	-	34,990,455.06	-	34,990,455.06
2. Use of Special Reserves	-	-	(34,990,455.06)	-	-	(34,990,455.06)	-	(34,990,455.06)
(V) Profit Distribution	-	-	-	134,888,823.02	(1,377,012,205.71)	(1,242,123,382.69)	-	(1,242,123,382.69)
1. Appropriation of Surplus Reserves	-	-	-	134,888,823.02	(134,888,823.02)	-	-	-
Thereof: Legal Surplus Reserves	-	-	-	134,888,823.02	(134,888,823.02)	-	-	-
Optional Surplus Reserves	-	-	-	-	-	-	-	-
2. Profit Distribution to Owners	-	-	-	-	(1,242,123,382.69)	(1,242,123,382.69)	-	(1,242,123,382.69)
3. Others	-	-	-	-	-	-	-	-
(VI) Transfer Within Owners' Equity	-	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	2,079,387,600.00	2,490,643,442.26	-	340,372,202.68	1,311,827,708.34	6,222,230,953.28	79,821,413.16	6,302,052,366.44

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
I. The Balance at the End of Last Year	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61
Plus: Accounting Policies Alteration	-	-	-	-	-	-	-
Prior Errors Correction	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
II. Opening Balance in Current Year	2,079,387,600.00	2,489,729,081.80	82,784,589.33	588,820,884.64	5,240,722,155.77	30,208,401.84	5,270,930,557.61
III. Increase/Decrease Amount in Current Year	-	-	122,698,790.33	761,795,535.54	884,494,325.87	36,371,152.84	920,865,478.71
(I) Net Profit	-	-	-	1,242,123,382.69	1,242,123,382.69	(12,628,847.16)	1,229,494,535.53
(II) Other Comprehensive Income	-	-	-	-	-	-	-
Sub-total of Above (I) and (II)	-	-	-	1,242,123,382.69	1,242,123,382.69	(12,628,847.16)	1,229,494,535.53
(III) Capital Contributed and Decreased	-	-	-	-	-	49,000,000.00	49,000,000.00
1. Capital Contributed	-	-	-	-	-	49,000,000.00	49,000,000.00
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-
3. Others	-	-	-	-	-	-	-

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Consolidated Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Appropriation and Use of Special Reserves	-	-	-	-	-	-	-
1. Appropriation of Special Reserves	-	-	-	-	-	-	-
2. Use of Special Reserves	-	-	-	-	-	-	-
(V) Profit Distribution			122,698,790.33	(480,327,847.15)	(357,629,056.82)	-	(357,629,056.82)
1. Appropriation of Surplus Reserves	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Thereof: Legal Surplus Reserves	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Optional Surplus Reserves	-	-		-	-	-	-
2. Profit Distribution to Owners	-	-		(357,629,056.82)	(357,629,056.82)	-	(357,629,056.82)
3. Others	-	-	-	-	-	-	-
(VI) Transfers Within Owners' Equity	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	2,079,387,600.00	2,489,729,081.80	205,483,379.66	1,350,616,420.18	6,125,216,481.64	66,579,554.68	6,191,796,036.32

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity  
Year 2012

Monetary Unit: CNY

Item	Amount in Current Year							Minority Shareholders' Equity	Total Owner's Equity
	Owner's Equity Attributable to Parent Company								
	Paid-in Capital	Capital Surplus	Special Reserves	Surplus Reserves	Undistributed Profit	Sub-total			
I. The Balance at the End of Last Year	2,079,387,600.00	2,449,637,374.45	-	205,483,379.66	1,383,002,167.98	6,117,510,522.09	-	6,117,510,522.09	
Plus: Accounting Policy Alteration	-	-	-	-	-	-	-	-	
Prior Errors Correction	-	-	-	-	-	-	-	-	
II. Opening Balance in Current Year	2,079,387,600.00	2,449,637,374.45	-	205,483,379.66	1,383,002,167.98	6,117,510,522.09	-	6,117,510,522.09	
III. Increase/Decrease Amount in Current Year	-	404,360.46	-	134,888,823.02	(28,123,975.55)	107,169,207.93	-	107,169,207.93	
(I) Net Profit	-	-	-	-	1,348,888,230.16	1,348,888,230.16	-	1,348,888,230.16	
(II) Other Comprehensive Income	-	-	-	-	-	-	-	-	
Sub-total of above (I) and (II)	-	-	-	-	1,348,888,230.16	1,348,888,230.16	-	1,348,888,230.16	
(III) Capital Contributed/Decreased by Owners	-	404,360.46	-	-	-	404,360.46	-	404,360.46	
1. Capital Contributed by Owners	-	-	-	-	-	-	-	-	
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	404,360.46	-	-	-	404,360.46	-	404,360.46	
3. Others	-	-	-	-	-	-	-	-	

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount in Current Year							Minority Shareholders' Equity	Total Owner's Equity
	Owner's Equity Attributable to Parent Company								
	Paid-in Capital	Capital Surplus	Special Reserves	Surplus Reserves	Undistributed Profit	Sub-total			
(IV) Appropriation and Use of Special Reserves	-	-	-	-	-	-	-	-	
1. Appropriation of Special Reserves	-	-	34,990,455.06	-	-	34,990,455.06	-	34,990,455.06	
2. Use of Special Reserves	-	-	(34,990,455.06)	-	-	(34,990,455.06)	-	(34,990,455.06)	
(V) Profit Distribution	-	-	-	134,888,823.02	(1,377,012,205.71)	(1,242,123,382.69)	-	(1,242,123,382.69)	
1. Appropriation of Surplus Reserves	-	-	-	134,888,823.02	(134,888,823.02)	-	-	-	
Thereof: Legal Surplus Reserves	-	-	-	134,888,823.02	(134,888,823.02)	-	-	-	
Optional Surplus Reserves	-	-	-	-	-	-	-	-	
2. Profit Distribution to Owners	-	-	-	-	(1,242,123,382.69)	(1,242,123,382.69)	-	(1,242,123,382.69)	
3. Others	-	-	-	-	-	-	-	-	
(VI) Transfer Within Owners' Equity	-	-	-	-	-	-	-	-	
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-	-	
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-	-	
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-	-	
4. Others	-	-	-	-	-	-	-	-	
IV. The Balance at the End of Current Year	2,079,387,600.00	2,450,041,734.91	-	340,372,202.68	1,354,878,192.43	6,224,679,730.02	-	6,224,679,730.02	

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount of Last Year						Minority Shareholders' Equity	Total Owner's Equity
	Owner's Equity Attributable to Parent Company							
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total			
I. The Balance at the End of Last Year	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61	
Plus: Accounting Policies Alteration	-	-	-	-	-	-	-	
Prior Errors Correction	-	-	-	-	-	-	-	
II. Opening Balance in Current Year	2,079,387,600.00	2,449,637,374.45	82,784,589.33	636,342,111.83	5,248,151,675.61	-	5,248,151,675.61	
III. Increase/Decrease Amount in Current Year	-	-	122,698,790.33	746,660,056.15	869,358,846.48	-	869,358,846.48	
(I) Net Profit	-	-	-	1,226,987,903.30	1,226,987,903.30	-	1,226,987,903.30	
(II) Other Comprehensive Income	-	-	-	-	-	-	-	
Sub-total of Above (I) and (II)	-	-	-	1,226,987,903.30	1,226,987,903.30	-	1,226,987,903.30	
(III) Capital Contributed and Decreased by Shareholders	-	-	-	-	-	-	-	
1. Capital Contributed by Shareholders	-	-	-	-	-	-	-	
2. The Amount of Share-based Payments Recorded in Owner's Equity	-	-	-	-	-	-	-	
3. Others	-	-	-	-	-	-	-	

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.



Changchun Railway Vehicles Co., Ltd.  
Statement of Changes in Owners' Equity (Continued)  
Year 2012

Monetary Unit: CNY

Item	Amount of Last Year						
	Owner's Equity Attributable to Parent Company					Minority Shareholders' Equity	Total Owner's Equity
	Paid-in Capital	Capital Surplus	Surplus Reserves	Undistributed Profit	Sub-total		
(IV) Appropriation and Use of Special Reserves	-	-	-	-	-	-	-
1. Appropriation of Special Reserves	-	-	-	-	-	-	-
2. Use of Special Reserves	-	-	-	-	-	-	-
(V) Profit Distribution			122,698,790.33	(480,327,847.15)	(357,629,056.82)	-	(357,629,056.82)
1. Appropriation of Surplus Reserves	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Thereof: Legal Surplus Reserves	-	-	122,698,790.33	(122,698,790.33)	-	-	-
Optional Surplus Reserves	-	-		-	-	-	-
2. Profit Distribution to Owners	-	-		(357,629,056.82)	(357,629,056.82)	-	(357,629,056.82)
3. Others	-	-	-	-	-	-	-
(VI) Transfers Within Owners' Equity	-	-	-	-	-	-	-
1. Capital Transferred from Capital Surplus	-	-	-	-	-	-	-
2. Capital Transferred from Surplus Reserves	-	-	-	-	-	-	-
3. Recovery of Losses by Surplus Reserves	-	-	-	-	-	-	-
4. Others	-	-	-	-	-	-	-
IV. The Balance at the End of Current Year	2,079,387,600.00	2,449,637,374.45	205,483,379.66	1,383,002,167.98	6,117,510,522.09	-	6,117,510,522.09

Notes to financial statements published on page 21 to page 96 are the integrated part of this financial statement.

## Notes to Financial Statements

Up to Dec. 31, 2012

(The monetary unit of the Notes is RMB yuan)

### 1. Brief introduction to the Company

CNR Changchun Railway Vehicles Co., Ltd. (hereinafter referred to as "the Company") is a limited liability company founded in Changchun, Jilin Province, in March 2002 under the approval of the State Economic and Trade Commission (the Approval No.: G.J.M.Q.G. [2002] No. 136), and handled the industrial and Commercial registration procedures in Industrial and Commercial Administration of Changchun City and got the Business License of Enterprise Legal Person (Registered No.: 2200001009604) issued by Industrial and Commercial Administration of Changchun City on March 18, 2002. The operation period of the Company is 20 years since the date of the founding of the Company, with the registered capital of RMB 530 million yuan.

The Company is a limited liability company initiated and founded by China Northern Locomotive and Rolling Stock Industry Group Corporation (hereinafter referred to as "the Group") as the main sponsor. The Group invested the related operating assets and liabilities ("net assets") of the railway and urban rail passenger vehicle manufacturing (core business) affiliated under into the Company; the above-mentioned net assets, assessed by Zhongzi Assets Appraisal Limited, amounts to CNY595,440,200. Approved by The Ministry of Finance, in "Approval on State-owned Share Management of Changchun Railway Vehicles Co., Ltd. (in preparatory stages) by Ministry of Finance", the net assets invested by the Group are translated into 390,602,300 shares of the Company at the proportion of 65.6%, CNY1.00 for each share. Other promoters make investments in cash, with total cash in RMBY 212,500,000, which is translated into 139,397,700 shares at the proportion of 65.6%.

Approved by The State-owned Assets Management Committee Supervisor (hereinafter referred to as "SAC") of State Department concerning "Approval on overall restructuring and domestic listing of China Northern Locomotive and Rolling Stock Industry Group Corporation" (State-owned Assets Reform [2008] No. 294), the Group, made investment in related assets of its headquarters and its 20 wholly owned or share held subsidiaries, and in the value assessed plus cash on 31 December 2007, the appraisal base date, together with other promoters to initiate the establishment of China CNR Corporation Limited (hereinafter referred to as "CNR"). According to the restructuring agreement signed between the Group and CNR, the Group transferred 73.7% of the Company's shares to CNR. The Company changed its Articles of Association on August 27, 2008, and has received the updated business license (registration number: 220000000093577) on August 29, 2008 issued from Jilin Provincial Industry and Commerce Administration.

Based on decision of shareholders' general meeting on September 17, 2008, the Company determined to increase the registered capital from CNY 530 million to CNY1.11 billion. The newly increased registered capital was subscribed by new shareholders--Changchun Railway Vehicles Facilities Co., Ltd. (hereinafter referred to as "Changchun Railway Facilities") and CNR Changchun Railway Vehicles Group Co., Ltd. (hereinafter referred to as "CRC "). Changchun Railway Facilities contributed RMB 829,415,165.24 yuan in forms of monetary funds, physical assets and land use rights, in exchange for subscribing 404,310,656 shares; CRC contributed RMB 360,414,459.03 yuan in monetary funds, in exchange for subscribing 175,689,344 shares. Jilin Guangda CPA Limited conducted the verification about the paid-in capital of the new registered capital on 10 December 2008 and issued the contribution verification report JGYZ [2008] No. 1252. The Company changed the company's articles of association on December 19, 2008, and received the updated business license (registration number: 220000000093577) on December 31, 2008 issued from Jilin Provincial Industry and Commerce Administration.



## 1. Brief introduction to the Company (Continued)

Based on decision of shareholders' general meeting held on September 14, 2010, CNR raised investment funds CNY1.032 billion and in net assets of its wholly-owned subsidiary---CRC of the Group to increase capital of the Company, and the price converted into shares of the capital increase is determined at assessed value of net assets per share of the Company on December 31, 2009 as the base date. In reference to Assessment Report made by Zhongzi Assets Appraisal Co., Ltd. on June 25, 2010 ZZPBZ [2010] No. 78, net assets per share is CNY 2.533. The above-mentioned funds investment plus net assets of its wholly-owned subsidiary---CRC made on 31 December 2009 are translated into 1,145,076,944 ordinary shares; meanwhile the 175,689,344 ordinary shares originally held by CRC was canceled. Changchun Zhongfan CPA Limited has made verification of capital change on 5 November 2010 and issued CZFYZ [2010] No. 155 verification report. The Company changed its Articles of Association on September 14, 2010, and received the updated business license (registration number: 220000000093577) on November 8, 2010 issued from Jilin Provincial Industry and Commerce Administration.

On October 14, 2011, the Company, under the 2011 second temporary shareholders' general meeting resolutions, agreed that all the shares held by the shareholder, Changchun Railway Facilities, are transferred to CNR, the two sides signed in Beijing the "Share transfer Agreement", the equity acquisition price is RMBY 404,310,000. The two sides agreed that equity acquisition date is January 1, 2012, and the benefit corresponding to proposed transfer of share ownership made before December 31, 2011 (including the day) will belong to the transferor, the benefit corresponding to proposed transfer of share ownership made after January 1, 2012 (including the day) will belong to the transferee. After the acquisition of shares, direct shareholding proportion of CNR increases from 73.85% up to 93.29%.

The Company and its subsidiaries (hereinafter referred to as the "Group") principally engage in design, manufacturing, sales and leasing of railway passenger cars, EMU, urban rail vehicles and accessories, and in technical assistance and technical advice of related areas; in operation of export business of the Group's products, related products and technology.

## 2. Preparation basis of Financial Statements

### (1) Statement of A bidding by Accounting Standards for Business Enterprises

The financial statements comply with the requirements set forth in "Accounting Standards for Enterprises - Basic Standard" and 38 specific accounting standards issued by PRC Ministry of Finance (hereinafter "Ministry of Finance") on February 15, 2006, application guideline of enterprise accounting standards issued thereafter, explanations of enterprise accounting standard, as well as other relevant provisions (hereinafter collectively referred to as "Enterprise Accounting Standards"), and make a true and complete reflection on the Company's consolidated financial position and financial position on December 31, 2012, the Company's consolidated operating results and operation results, consolidated cash flows and cash flows in year 2012.

### (2) Fiscal year

The fiscal year of the Group is the Western calendar, i.e. from Jan 1 to Dec.31 each year.



## 2 Preparation basis of Financial Statements (Continued)

### (3) Measurement Attributes

In preparation of the financial statements, the historical cost shall be adopted for measurement.

### (4) Accounting standard currency and presentation currency

The Company's accounting standard functional currency is Renminbi. The preparation of financial statements shall adopt Renminbi as currency. The basis for selection of accounting standard currency made by the Company and its subsidiaries is the currency type for pricing and settlement of main business incomes.

## 3 Main accounting policies and main accounting estimates

### (1) The consolidated financial statements

The scope of consolidation for the consolidated financial statements is determined on the basis of control, including the Company and its controlled subsidiaries. Control refers to the power to determine a company's financial and operating policies, and is able to obtain benefits from the company's operation activities. Financial position, operating results and cash flow of subsidiaries starts from the control commencement date until the date that control ceases, and shall be included in the consolidated financial statements.

Interests, profit and loss and comprehensive income attributable to minority of shareholders in subsidiaries are respectively presented in the owner's equity of the consolidated balance sheet and the net profit and total comprehensive income items in the consolidated income statement.

If current profits and losses attributable to the minority of shareholders in the subsidiary exceed the share enjoyed by minority of shareholders' equity in the subsidiary, the balance is deducted from minority of shareholders' interests.

When the accounting period or accounting policies adopted by a subsidiary are inconsistent with that of the Company, in the merger, the Company's accounting period or accounting policies shall be followed to make the necessary adjustments on the subsidiaries' financial statements. All significant intra-group transactions in the merger, including any unrealized profits and balances, have been eliminated. Unrealized losses happened in intra-group transactions, if there is evidence proving that the losses are related to asset impairment loss, the losses are recognized in full amount.

### (2) Foreign currency translation

The investment in foreign currency received by the Group shall be translated into RMB in the spot exchange rate; other foreign currency transactions are translated into RMB at initial confirmation at the spot rate or the approximate exchange rate of the spot exchange rate on the transaction date.

The spot exchange rate refers to RMB foreign exchange rate issued by the People's Bank of China, foreign exchange rates issued by State Administration of Foreign Exchange or the cross rates in accordance with the issued foreign exchange rates. The approximate exchange rate of the spot exchange rate is the weighted average exchange rate similar to spot exchange rate of the transaction date decided as per the systematic and reasonable method.

### 3 Main accounting policies and main accounting estimates (Continued)

#### (2) Foreign currency translation (Continued)

At the balance sheet date, foreign currency monetary items are translated at the spot exchange rate at that date. Except for exchange differences of principal and interest of special borrowings related to the assets for acquisition or construction of qualifying capitalization (see Note 3 (16)), the other exchange differences are included in profit or loss. Foreign currency non-monetary items measured at historical cost are still translated in the spot exchange rate at transaction date.

#### (3) Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term, highly flowing investments that are readily convertible to known amounts of cash and little risk of changes in value.

#### (4) Inventories

Inventories are initially measured at cost. Costs of inventories include costs of purchase, processing cost and other expenses incurred in bringing the inventories to their present location and status. Cost of output inventories is calculated using the weighted average method. In addition to the purchase cost of raw materials, products and finished goods include direct labor and production expenses distributed in an appropriate proportion.

At balance sheet date, the inventory is measured in the lower value between the cost and net realizable value.

When the cost calculated in individual inventory items exceeds the net realizable value, devaluation provision for inventories is made and is credited into the current profit or loss. Net realizable value refers to the amount, in daily activities, that the estimated selling price of inventories subtracts the estimated costs, selling expenses and related taxes.

#### (5) Long-term Equity Investment

##### (a) Investment in Subsidiaries

In the Group's consolidated financial statements, long-term equity investments in subsidiaries shall be processed in accordance with Note 3 (a).

In the Company's separate financial statements, long-term equity investment cost of its subsidiaries is initially measured according to the following principles:

- For long-term equity investments in subsidiaries formed in consolidation of enterprises without common control, the Company shall use the assets paid in obtaining control of the acquiree at the purchase date, liabilities incurred or assumed, and the fair value of equity securities issued as the initial investment cost. For long-term equity investment formed in consolidation of enterprises without common control through multiple transactions and realized step by step, the initial investment cost refers to the book value of the acquiree's equity investment held before the acquisition date and the newly-added investment cost at purchase date.



### 3 Main accounting policies and main accounting estimates (Continued)

#### (5) Long-term Equity Investment (Continued)

##### (a) Investment in Subsidiaries(Continued)

- For long-term equity investments in subsidiaries formed instead of enterprise consolidation, initial recognition shall be made in accordance with the principles in Note 3 (5) (b).

In the individual financial statements, the Company uses the cost method for subsequent measurement of long-term equity investments in subsidiaries, except for actual payment made in investments or cash dividends or profits already declared but not yet paid, the Company shall adopt cash dividends or profits declared by the investee to recognize investment income, without considering the net profit achieved by the investee before and after investment. Investments in subsidiaries are stated in the balance sheet at cost less impairment losses (Note 3 (10) (c)).

##### (b) Investments in joint ventures

A joint venture refers to the enterprise jointly controlled by the Group and other parties under a contractual arrangement.

In obtaining investments in joint ventures and associates, the initial investment principles recognized by the Group are: for long-term equity investments made in cash payment, the Group shall adopt the actual purchase price as the initial investment cost; for long-term equity investment input by investors, the Group shall adopt the value set in investment contract or agreement value as the initial investment cost.

Subsequent accounting of long-term equity investments in joint ventures and associates shall adopt the equity method of accounting.

When using equity method to measure, the Group's detailed accounting treatments include:

- If the initial cost of a long-term equity investment is more than the investing enterprise's attributable share of the fair value of the invested entity's identifiable net assets for the investment, the former is taken as the cost of the long-term equity investment; If the initial cost of a long-term equity investment is less than the investing enterprise's attributable share of the fair value of the invested entity's identifiable net assets for the investment, the latter is taken as the cost of the long-term equity investment, the difference between the long-term equity investment and the initial investment cost shall be included in the current profits and losses.
- The acquisition of the investment, the Group shall use the attributable share of the investee's net gains and losses to subtract the investment in associates and joint ventures already held by the Group before for the first time implementation of Accounting Standards, the difference of equity investment borrower recognized according to original accounting standards and rules, the amount according to original amortization period in straight-line amortization method to recognize the investment income and adjust the book value of long-term equity investments; Use the investee's profits or cash dividends distributed and declared to calculate the part obtained, with corresponding reduction in book value of long-term equity investments.



### 3 Main accounting policies and main accounting estimates (Continued)

#### (5) Long-term Equity Investment (Continued) Continued)

##### (b) Investment in joint ventures (continued)

- In calculating the attributable share of the investee's net gains and losses, the Group shall use the fair value of investee's identifiable net assets as the basis, to make the necessary adjustments in accordance with the Group's accounting policies or accounting period for confirmation. The part of unrealized gain or loss resulting from internal transactions among the Group, its associates and joint ventures and attributable to Group and calculated according to shareholding proportion shall be eliminated in the equity method. Intercompany transactions unrealized losses, if there is evidence that the loss was related to asset impairment loss, the loss is recognized in full amount.
- For Net loss occurred in joint venture or associated enterprise, except that the Group shall assume obligation of additional loss, it is limited to long-term equity including book value of long-term equity investment and others materially forming the net investment in joint venture or associated enterprise by reducing to zero. For net profit subsequently realized by joint venture or associated enterprise, the Group shall recover to recognize attributable share of profit after it covers unrecognized attributable share of loss by attributable share of profit.
- For other changes in shareholders' equity of joint ventures or associates instead of net profit and loss, the Group shall adjust the book value of long-term equity investments and make it included in shareholders' equity.

The Group shall follow the principle in Note 3 (10) (c) to make long-term equity investment impairment.

##### (c) Other Long-term Equity Investment

Other long-term equity investment refers to long-term equity investment that there is no control, joint control, significant impact to entity invested, and there is no quotation in active market, and fair value can not be measured reliably.

The Group shall adopt the above-mentioned recognition and measurement principles of the initial cost for investments in joint ventures and associates to confirm the initial investment costs of the same type of investments, and shall adopt the cost method (see Note 3 (5) (a)) for subsequent measurement. Other long-term equity investments shall follow the provisions set forth in Note 3 (10) (b) for impairment.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (6) Fixed assets and construction in process

Fixed assets refer to the tangible assets held by the Group for manufacturing goods, offering labor service, rent or operational management, with its service life exceeding one fiscal year.

Fixed assets are stated in the balance sheet, by way of cost subtracting the accumulated depreciation and impairment losses (see Note 3 (10) (c)). Construction in progress is stated in the balance sheet by way of cost subtracting impairment losses (see Note 3 (10) (c)).

The initial cost of purchased fixed asset comprises the purchase price, relevant taxes and expenditure that makes the asset to its intended use and that may be attributable to the asset. The initial cost of self-constructed assets includes the cost of materials, direct labor, borrowing costs conforming to the capitalized conditions (see Note 3 (16)), and necessary expenses incurred before making the asset to its intended use.

When it reaches the expected conditions for use, the construction in process will transfer into fixed asset. The construction in process shall not be made depreciation.

The components of a fixed asset have different useful lives or bring economic benefits for the Group in different ways and to which different depreciation rates or depreciation methods apply, and they shall be recognized as fixed assets on an individual component basis by the Group.

If the subsequent expenses related to a fixed asset, including the relevant expenses of changing some parts of the fixed asset, when they meet the recognition conditions of fixed asset, they shall be included in the cost of fixed asset, meanwhile the book value of the replaced parts is deducted; the expenses related to the daily maintenance of the fixed assets shall be included in the current profits and losses.

Profit or loss arising from retirement or disposal of fixed assets refers to the difference between the net amount obtained in disposal and book value, and is confirmed in profit or loss at date of retirement or disposal.

The Group shall use the cost of fixed assets to subtract estimated residual value and accumulated impairment to calculate the depreciation of fixed assets within its service life in average method, residual value and depreciation rates are as follows:

	<u>Service life</u>	<u>Residual value rate</u>	<u>Depreciation rate</u>
Houses and buildings	30 years	3%-5%	3.17-3.23%
Machinery and equipments	5-18 years	3%-5%	5.28-19.40%
Office equipments and others	5 years	3%-5%	19.00-19.40%
Transport facility	6 years	3%-5%	15.83-16.17%

The Group re-checks the service life of fixed assets, the estimated net residual value and depreciation method at least at the end of each year.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (7) Financial leasing

Leasing includes financial leasing and operating leasing. Financial leasing refers to the leasing no matter the ownership finally transferred or not, but in essence, all risks and remuneration relating to assets ownership has transferred. Operating leasing refers to other leasings except for financial leasing.

##### (a) Rented assets by financial leasing

On the lease beginning date, the Group's financed leased assets shall adopt the lower value between the fair value of leased assets at lease commencement date and the present value of the minimum lease payment as entry value of the leased asset, and the minimum lease payments shall be the entry value of long-term payables, the difference is recognized as unrecognized finance charges. The Group will credit initial direct costs incurred in finance lease in the leased asset. Finance leased assets shall be depreciated in accordance with depreciation policy described in Note 3 (6), impairment shall be made according to accounting policies described in Note 3 (10) (c).

Where the rented assets ownership can be reasonably decided to obtain when the leasing period expires, the rented assets are accrued depreciation during the service life. Otherwise, it takes the less one of the leasing period of the leasing assets and the service life of the leasing assets to accrue depreciation.

The Group adopts actual interest rate to amortize the unrecognized financial costs within the different periods of leasing, and treats as per the borrowing costs principle (See Note 3(16)).

On the date of balance sheet, the Group will list the balance that the financial leasing related long-term accounts payable deduct unrecognized financial costs, as long-term liabilities and long-term liabilities are due within one year.

##### (b) Rented assets by operating leasing

The rental expenses of rented assets by operating leasing are recognized as cost or expense of related assets by straight-line method within the lease period.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (8) Intangible assets

Intangible assets are stated in the balance sheet by way cost subtracting the accumulated amortization (only for the intangible asset with limited service life) and impairment losses (see Note 3 (10) (c)).

For intangible assets with limited service life, the Group's intangible assets shall be amortized over its estimated service life in straight-line method after its cost subtracts the estimated residual value and accumulated impairment. The amortization period of intangible assets are as follows:

	amortization period
Land use right	50 years
Non-patent technology	5-10 years
Others	3-10 years

The Group takes the intangible assets with unexpectable future economic benefits period as intangible assets with uncertain service life, and doesn't make amortization for those intangible assets. The Group has no intangible assets with uncertain service life as of the date of the balance sheet.

The Group's internal research and development expenditures consist of expenditures in research stage and expenditures in development stage. The expenditures incurred in research stage shall be credited in current profit or loss. The expenditures in development stage, if a product or process formed in development is feasible technically and commercially and the Group has sufficient resources and the intention to complete development, and expenditures in development stage can be measured reliably, the expenditure in the development stage shall be capitalized. Capitalised development expenditures are stated in the balance sheet at cost less impairment losses (see Note 3 (10) (c)). Other development expenditures shall be recognized as expenses in the period incurred.

#### (9) Financial instruments

The Group's financial instruments include cash, equity investments, receivables, payables, borrowings and paid-up capital and so on except for long-term equity investments (see Note 3 (5)).

##### (a) Recognition of measurement of financial assets and financial liabilities

When financial asset and financial liability in the Group becomes a party to a financial instrument contract clause, it shall recognize in balance sheet.

The Group divides financial assets and financial liabilities into different categories upon purposes obtaining assets or assuming liabilities in initial recognition: financial assets and financial liabilities which are measured by fair value and their changes are included in the current profits and losses, loan and accounts receivable, investment held to expiry, financial assets available for sale and other financial liabilities.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

##### (a) Recognition of measurement of financial assets and financial liabilities(Continued)

The financial assets and financial liabilities initially recognized shall be measured at their fair values. For the financial assets and liabilities measured at their fair values and of which the variation is recorded into the profits and losses of the current period, the transaction expenses thereof shall be directly recorded into the profits and losses of the current period; for other categories of financial assets and financial liabilities, the transaction expenses thereof shall be included into the initially recognized amount. After initial recognition, the consequent measurements of the financial assets and financial liabilities are as follows:

##### - Accounts receivable

Accounts receivable refers to non-derivative financial assets which there are no quotations in active markets, recovery amount is fixed or can be determined.

Accounts receivable is measured at amortized cost by effective interest rate method after initial recognition.

##### - Other Financial Liabilities

Other financial liabilities refer to the financial liabilities except the financial liabilities which are measured by fair value and their changes are included in the current profits and losses.

The Group's other financial liabilities shall, after being initially recognized, be measured by use of the effective interest method at amortized cost.

##### (b) Offset and presentation of financial assets and financial liabilities

Financial assets and financial liabilities are presented separately in the balance sheet, without any offset. However, the following conditions are satisfied, the net amount after being offset is presented in the balance sheet:

- The Group has the legal rights to offset the recognized amounts, and the legal right is currently enforceable;
- The Group intends to make settlement in net amount or meanwhile make the asset become cash and pay off the financial liability simultaneously.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (9) Financial instruments (Continued)

##### (c) Determination of fair value

For financial asset or financial liability in active market, the Group shall determine its fair value in the price quoted in the active market. For financial instrument not in active market, the Group shall adopt the valuation techniques to determine its fair value. Valuation techniques include the reference to the transaction price in recent market transaction made by parties with knowledgeable to relevant conditions and willing to make transaction and the reference to the current market quotations of other financial instruments substantially identical. The Group shall make regular appraisal on valuation technique and shall make test on its validity.

##### (d) Recognition on termination of financial assets and financial liabilities

When the contractual right receiving cash flows of financial asset terminates or almost all the risks and rewards in ownership are transferred, the Group will stop recognizing the financial assets.

When the whole transferring of financial asset satisfies the termination recognition conditions, the Group shall credit the difference between the following two amounts into current profit or loss:

- The book value of the transferred financial asset;
- The sum of price received from the transfer and change accumulated amount of fair value credited directly in owner's equity.

When the current obligations of financial liabilities have been discharged in whole or in part, the Group will stop recognizing the financial liability or part of it.

##### (10) Impairment of asset

Except for asset impairment involved in Note 3 (4), Impairment of other assets shall be processed according to the following principles:

##### (a) Impairment of financial assets

The Group shall make check on book value of other financial assets instead of the financial assets measured in fair value with variations credited into current profit or loss at the balance sheet date, If there is objective evidence showing that the financial asset is impaired, the impairment shall be made .

- Receivables

For receivables, use both individual and combination methods to assess their impairment losses.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) impairment of assets (continued)

##### (a) Impairment of financial assets (continued)

###### - Receivables (Continued)

For assessment of impairment loss on an individual method basis, when the present value of expected future cash flow (excluding future credit loss not yet occurred) of receivables, translated at the original effective exchanged interest rate, is lower than the book value, the Group shall deduct the book value of receivables the present value, the deducted amount shall be recognized as an impairment loss and credited into the current profit or loss.

For assessment of impairment loss on combination method basis, the amount of the impairment loss is adjusted and recognized according to historical loss experiences of receivables (including the receivables not impaired through assessment in individual method) with similar credit risk characteristics and according to the observable data reflecting the current economic conditions.

After impairment losses of receivables are recognized, if any objective evidence shows that the financial asset has been restored, and are objectively related to matters occurring after the impairment was recognized, the Group will reverse the impairment loss previously recognized and credit it into current profit or loss. The reversed book value shall not exceed the amortized cost at the reversal date of the financial asset under assumption that impairment is not made.

##### (b) Impairment of other long-term equity investments

Impairment losses of other long-term equity investments (see Note 3 (5) (c)) shall be assessed by use of individual method.

When other long-term equity investment is impaired, the Group will recognize the difference between this book value of other long-term equity investment and the present value of future cash flows translated in the then market rate of return of similar financial assets as impairment loss and credit it into the current profit or loss. Such impairment losses are not reversed.

##### (c) Impairment of other assets

The Group will determine whether the following assets are impaired according to internal and external information at the balance sheet date, including

- Fixed assets
- Construction in progress
- intangible assets
- the long-term equity investments of subsidiary, joint venture or associated companies

The Group shall make impairment test on assets that impairment may occur, and shall estimate the recoverable amount of assets.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (10) Impairment of assets (continued)

##### (c) Impairment of other assets (continued)

Asset group is the smallest identifiable group of assets, its cash inflow generated is largely independent of those other assets or groups of assets. The asset group consists of related assets that generate cash inflows. Identification of an asset group shall mainly consider whether the asset group may generate cash inflows independently, also taking into account the management manner of production and operational activities by management authority, as well as the decision-making for use or disposal of assets.

The recoverable amount shall refer to the higher value between the net amount of the fair value of asset (or group of assets, asset groups, the same below) subtracting the disposal cost and the present value of asset expected future cash flows, whichever is higher.

Net amount of asset's fair value subtracting disposal costs is determined according to the principle that the sales agreement price in fair transaction subtracts the amount directly attributable to the disposal expense of assets. The present value of assets expected future cash flows is determined according to the amount translated in appropriate pre-tax translation rate and estimated future cash flow arising during the continuous use and final disposal of assets.

The results of recoverable amount estimation showed that, if the asset's recoverable amount is less than its book value, the book value of the asset is reduced to its recoverable amount, the reduced amount shall be recognized as an impairment loss and shall be credited in current profits and losses, meanwhile impairment of assets shall be made. Impairment loss related to asset group or asset groups combination shall be deducted and allocated to book value of goodwill in the asset group or combination of asset groups, then according to the proportion of book value of other assets other than goodwill shared in asset group or combination of asset groups, the book value of other assets shall be reduced on pro rata basis, but the book value of each asset after reduction shall not be less than the highest among the net amount of asset's fair value subtracting disposal cost (if determinable), present value of the asset expected future cash flows (if determinable) and zero.

Once the impairment loss is recognized, it shall not be reversed in subsequent accounting periods.

#### (11) Employee benefits

Employee benefits refer to various forms of remuneration given by the Group in exchange for services rendered by employees and other relevant expenditures. Except for dismiss benefits, the employee benefits payable by the Group in exchange for services in the accounting period shall be recognized as liability with corresponding increase in cost of assets or current expenses.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (11) Employee benefits (continued)

##### (a) Social insurance benefits and housing fund

In accordance with relevant Chinese laws and regulations, the Group's employees participate in the social security system set up and managed by government agencies. According to state regulations and proportion benchmark, the Group makes contributions to the basic pension insurance, basic medical insurance, unemployment insurance, work injury insurance and maternity insurance and other social insurance and housing fund for the employees. The contributions of social insurance and housing fund shall be credited to the asset cost or profit or loss in accordance with the principle of accrual basis. The Group regularly pay the amounts in accordance with standards prescribed by the State without any other obligations.

In addition, the Group also provide supplementary retirement benefits for employees retired at or before December 31, 2007. The employees of the Group retired after December 31 2007 will no longer be entitled to supplemental retirement benefits. Retirement benefits complemented by the Group are based on estimation of the commitment of the Group on its employees and calculated in actuarial method to pay for their future retirement benefits. Such benefits shall be translated into present value by use of discount rate. Discount rate shall be is the rate of return of similar Chinese government bonds during the period maturity date and the Group's obligations at the balance sheet date. In calculating the Group's obligations, the accumulated amount of any part exceeding the current responsibility value by 10% shall be amortized over the future expected lifetime of benefit plans. Otherwise, the actuarial gain or loss is not recognized.

##### (b) Share payment

The Group's share payment is the equity-settled share payment.

##### - Equity-settled share payment

When the Group's shares or other equity instruments are exchanged in return for employee services, equity instruments granted to employees are measured at fair value. For the share payment transactions immediately exercised after the grant, the Group shall make it included in the relevant costs or expenses in fair value of the equity instruments at the grant date, with a corresponding increase in capital reserve. For service with completion of the waiting period after granting or share payment transactions exercisable after meeting the specified performance conditions, the Group shall, at each balance sheet date in the waiting period, according to subsequent information on the latest available number of employees whose right may be exercised, make a best estimate of the number of equity instruments exercised, on this basis in accordance with the fair value of equity instruments at the grant date, credit the service obtained in the current period into the costs or expenses associated and make it correspondingly credited into capital reserve.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (11) Employee benefits (continued)

##### (c) Early retirement benefits

When the early retirement plans meet the following conditions, predicted liabilities shall be confirmed and meanwhile shall be credited into current profit or loss:

- The Group has formulated a formal early retirement plan and the plan will be implemented;
- The Group cannot unilaterally withdraw the plan or agreement.

#### (12) Income Taxes

Apart from the income tax arising from transactions or events in business combination and recognized directly in equity (including other comprehensive income), the Group will make the current and deferred income tax credited to the current profit and loss..

The current income tax is adjusted in accordance with taxable income of the year, the expected payable amount of income taxes calculated according to the tax law, plus the income tax payable of the previous year.

At balance sheet date, if the Group has a legally enforceable right to make net amount settlement and intends to make net amount settlement or make it along with acquiring assets and settling the liabilities simultaneously, then the current income tax assets and current income tax liabilities are presented on offset net amount.

The deferred income tax assets and liabilities are determined in light of the deductible temporary difference and tax payable temporary difference. The temporary difference refers to the difference between the book value of the assets or liabilities and the taxation basis, including the losses deductible and tax deduction that can be carry forward the future years. The recognition of deferred income tax assets takes the taxable income amount as the limit that is likely to obtain to offset the deductible temporary difference.

If it is not enterprise combination transaction and when transaction occurs, it affect neither accounting profits nor the taxable income amount (or deductible losses), the temporary difference in the transaction will not produce deferred income tax. The temporary difference resulted from initial recognition of goodwill would not produce the relevant deferred income tax.

On the balance sheet date, the Group measures the book value of the deferred income tax assets and liabilities in light of the expected recover or settle ways, in accordance the provisions of the issued tax law, as per the tax rate applicable to the period during which the assets are expected to be recovered or the liabilities are expected to be settled.

The Group shall re-examine the book value of deferred income tax assets on the balance sheet date. If it is unlikely to obtain sufficient taxable income taxes to offset the benefit of the deferred income tax assets, the book value of the deferred income tax assets shall be written down. When it is probable to obtain sufficient taxable income taxes, such write-down amount shall be subsequently reversed.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (12) Income Taxes (Continued)

On the date of balance sheet, the deferred income tax assets and liabilities are presented in the in the deducted net amount when meeting the following conditions simultaneously:

- The taxpayer has the statutory rights to settle the current income tax assets and liabilities in net amount;
- And the deferred income tax assets and the liabilities are related to the tax income levied by the same tax levying department on the same taxpayer or related to different taxpayers, but during every deferred income tax asset or liability reversed period of significance, the taxpayers concerned are intended to settle the current income tax assets and liabilities in net amount or obtain assets, liquidate liabilities simultaneously.

#### (13) Estimated debts and contingent debts

If the obligation pertinent to contingencies is a current obligation of the Group, and it is likely to cause any economic benefit to flow out of the Group as a result of performance of the obligation, and the relevant amount can be measured in a reliable ways, the Group shall recognize them as estimated debts. The estimated debts that greatly affect the monetary time value shall be determined in the amount after estimated future cash flow discount.

A potential obligation caused by past transactions or events and whose existence will be confirmed only by the occurrence or non-occurrence of uncertain future events; or a current obligation caused by a past transaction or event but is not recognized because the performance of the obligation is not likely to incur an outflow of economic benefits from the Group or because the amount of the obligation cannot be measured in a reliable way, the Group shall disclose the potential obligation or current obligation as contingent debts.

#### (14) Revenue recognition

##### (a) Revenues from Sales of Goods

The Group recognizes revenues from sales of goods when they simultaneously meet above general recognition conditions and the following conditions:

- The Group has transferred main risks and rewards of goods ownership to the buyer;
- The Group neither keeps continuous management right commonly related to ownership, nor implement effective control to goods sold;

The Group recognizes revenues from sales of goods upon fair value of contract or agreement price received or receivable.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (14) Revenue recognition (Continued)

##### (b) Income from Rendering of Service

The group recognizes income from rendering of service upon fair value of contract or agreement price received or receivable.

If result of transaction for rendering of service can be reliably estimated on the date of the balance sheet, income from rendering of service shall be recognized upon completion percentage method. The completion process for rendering service transaction shall be determined by the proportion of cost incurred to total estimated cost.

When the labor transaction results cannot be estimated reliably, if the labor costs incurred are expected to be compensated, labor income shall be determined in accordance with the amount of labor costs already incurred, labor costs shall be carried over in accordance with the same amount; if the labor costs already incurred is not expected to be recoverable, the labor costs incurred will be already included in the current profit and loss, without determination of providing the labor income revenue.

##### (c) Interest Income

Interest income is calculated and determined upon time and effective interest rate of monetary fund lent.

#### (15) Government subsidies

Government subsidies refer to monetary assets or non-monetary assets which the Group freely obtains from government, but not including the capital invested in the Group by government as investor. In earmarks such as investment allowance from government, etc., if that allowance shall be treated as capital surplus upon the state relevant regulations, it also belongs to nature of capital investment other than government subsidies.

The government subsidies shall not be recognized until they can meet the conditions for the government subsidies; and can obtain the government subsidies.

If a government subsidy is a monetary asset, it shall be measured in the light of the received or receivable amount. If a government subsidy is a non-monetary asset, it shall be measured at its fair value.

The government subsidies pertinent to assets shall be recognized as deferred income by the Group, and equally distributed within the useful lives of the relevant assets, and included in the current profits and losses. The government subsidies pertinent to incomes if used for compensating the related future expenses or losses of the enterprise shall be recognized as deferred income by the Group and shall be included in the current profits and losses during the period when the relevant expenses are recognized; if used for compensating the related expenses or losses incurred to the Group shall be directly included in the current profits and losses.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (16) Borrowing costs

Where the borrowing costs incurred to the Group can be directly attributable to the acquisition and construction of assets eligible for capitalization, it shall be capitalized and recorded into the costs of relevant assets.

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Other borrowing costs shall be recognized as expenses on the basis of the actual amount incurred, and shall be recorded into the current profits and losses.

During the period of capitalization, the to-be-capitalized amount of interests (including the amortization of discounts or premiums) in each accounting period shall be determined according to the following provisions:

- For the special borrowings borrowed for purpose of acquisition or construction of assets satisfying the capitalizing conditions, the Group uses the current interest expense calculated according to the effective interest for the special borrowings to deduct the interest income of unused borrowing funds deposited in the bank or investment income earned in temporary investment to determine the capitalized interest amount of special borrowings.
- For general borrowings occupied for construction of assets eligible for capitalization, the Group calculates and determines the interests to be capitalized from general borrowings by weighted average of assets expenditures (the amount by accumulated assets expenditures less special borrowing) multiply by capitalization rate of occupied general borrowings. Capitalization rate is calculated and recognized by real interest rate from weighted average upon general borrowings.

The Group determines effective interest rate of borrowings by the following: it is the interest rate used to discount the future cash flow of borrowings in expected duration or a shorter applicable period into the determined amount of the borrowings at initial recognition. The exchange balance from principal and interests of foreign currency special borrowings is capitalized during capitalization period, and is included in assets cost eligible for capitalization. The exchange balance from principal and interests of other foreign currency borrowings except foreign currency special borrowings is recognized as financial expense and is included in the current profits and losses.

The capitalization period shall refer to the period from the commencement to the cessation of capitalization of the borrowing costs, excluding the period of suspension of capitalization of the borrowing costs. When assets expenditure and the borrowing costs have occurred and the necessary acquisition and construction or production activities have started to make the assets to be ready for the intended use or sale, the borrowing costs start capitalization. When the qualified asset under acquisition and construction or production is ready for the intended use or sale, the capitalization of the borrowing costs shall be ceased. Where the acquisition and construction or production of a qualified asset is interrupted abnormally and the interruption period lasts for more than 3 months, the capitalization of the borrowing costs shall be suspended by the Group.

#### (17) Profits distribution

After the balance sheet date, the planned to distribute dividends or profits in the profits distribution plan after consideration and approval, are not recognized as liabilities on the balance sheet date, are disclosed in the Note separately.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (18) Affiliated Parties

When a party controls, jointly controls or exercises significant influence over another party, or when two or more parties are under the control, joint control or significant influence of the same party, the affiliated party relationships are constituted. The affiliated party can be an individual or an enterprise. Enterprises only under the control of the state but without other affiliated party relations do not constitute the affiliated party of the Group. The affiliated parties of the Group and the Company include, but not limited to:

- (a) The parent company of the Company;
- (b) The subsidiaries of the Company;
- (c) Other enterprises under the control of the same parent company of the Company;
- (d) The investors having joint control over or having significant influence on the Company;
- (e) The enterprises or individuals under the control and joint control of the same party with the Group;
- (f) Joint venture of the Group, including subsidiaries of joint ventures;
- (g) Associates of the Group, including subsidiaries of associates;
- (h) The Group's key management personnel and their close family members;
- (i) Key management personnel and their close family members in the parent company of the Company; and
- (j) The Group's principal individual investors, key management personnel or other enterprises controlled and joint controlled by their close family members.

#### (19) Main accounting estimates and judgment

When preparing financial statements, the managements of the Group need to use estimates and assumptions, which will affect the application of the accounting policies, and the amount of the assets, liabilities, income and expenses. The actual situations might be different from these estimates. The managements of the Group shall make consecutive evaluations on the key assumptions relating to estimates and the judgment of uncertain factors, the affects of the accounting estimates changes shall be recognized in the current period of the changes and the future periods.

Except for the data on the assumptions and risks factors of employee compensation retirement welfare and early retirement welfare, financial instruments fair value stipulated in Note 22 and Note 41, the uncertain factors of other main estimated amount are as follows:

##### (a) Impairment of accounts receivable

As described in Note 3 (10) (a), the Group shall review the receivables measured at amortized cost at the balance sheet date to assess whether there is an impairment, and to assess the specific amount in case of impairment losses. Objective evidence of impairment shall include the observable data showing the sharp decline in expected future cash flow of individual receivable or a combination of receivables, and the observable data of material adverse change in the financial position of debtor in individual receivable or a combination of receivables. If there is evidence indicating that the values of the receivables have been restored and objectively related to an event occurring after the impairment was recognized, then the previously recognized impairment losses shall be reversed.



### 3. Main accounting policies and main accounting estimates (Continued)

#### (19) Main accounting estimates and judgment (Continued)

##### 3. Main accounting policies and main accounting estimates (Continued)

As described in Note 3 (4) above, the Group regularly estimates the net realizable value of inventories, and determines the inventory devaluation based on the difference when the cost of inventories is higher than the net realizable value. When the Group estimates the net realizable value of inventories, the Group shall consider the purpose of holding the inventories, and will adopt available information for basis of estimation, including the inventory market price and the Group's historical operating costs. Actual selling price, completion costs and selling expenses and taxes of inventory may vary with change in marketing conditions, production technology or actual use of inventory, and therefore the amount of inventory impairment may change with the above reasons. Adjustment for inventory impairment provision will affect the estimation of change in current profit and loss.

#### (c) Impairment of fixed assets and intangible assets

As described in Note 3 (10), the Group will, at the balance sheet date, make impairment assessment on fixed and intangible assets to determine whether the recoverable amount of assets declined below its book value. If circumstances indicate that the book value of fixed assets, intangible assets and other assets may not be fully recoverable, these assets are considered to be impaired and impairment losses shall be recognized accordingly.

The recoverable amount is the higher between the net amount of the fair value of asset (or asset group) subtracting disposal cost and the present value of asset (or group of assets) expected future cash flows. As the Group cannot obtain reliably the open market price of assets (or asset group) of and therefore cannot estimate reliably the fair value of assets. In expecting the present value of future cash flow, significant judgments is required for yield, sale price, related operating costs of the asset (or asset group) product, and for translation rate used in calculating the present value. The Group shall use all the available relevant information in estimation of the recoverable amount, including forecast of yield, price and related operating costs made on basis of reasonable and supportable assumptions.

#### (d) Depreciation and amortization of fixed assets and intangible assets,

As described in Note 3 (6) and 3 (8) above, after taking into account of the residual value fixed assets and intangible assets, the Group makes depreciation and amortization within its service life. The Group regularly reviews the service lives of the underlying assets to determine depreciation and amortization expense amount included in each reporting period. Service life of the asset is determined on basis of historical experience of similar assets and in combination of expected technological changes. If significant change happens in previous estimates, the depreciation and amortization expense shall be adjusted in the future period.

### 3. Main accounting policies and main accounting estimates (Continued)

#### (19) Main accounting estimates and judgment (Continued)

##### (e) Product quality guarantee

As described in note 26, the Group will, based on recent maintenance experience, estimate the expected liabilities on quality after-sales service commitment provided to customers for sale, repair and renovation of locomotives, vehicles and parts. Since the recent maintenance experience may not reflect the future maintenance, the Group's management shall make more judgment to estimate the preparation. Any increase or decrease in such preparation may affect future profit or loss.

#### 4 Taxes

- (1) The Group's applicable taxes relating to products sales and providing services are operating tax, value-added tax, urban maintenance and construction tax and extra charges of education funds, etc.

Tax categories	Taxation standards
Operating tax	5% of the operating revenue taxable
Urban maintenance and construction tax	7% of the actually paid operating tax, value-added tax
Extra charges of education funds	5% of the actually paid operating tax, value-added tax
VAT	Except for the following tax concessions, according to tax laws, 13% -17% of goods sales and taxable labour income shall be used as output tax, after offsetting the deductible input tax, the difference is VAT payable

##### (2) Income tax

The Company's statutory tax rate IS 25%, performed at a preferential rate of 15% (2011: 15%) for the year. Approved by Jilin Provincial Science and Technology Department in [2008] No. 124, the Company is certified as high-tech enterprise, and has received high - tech enterprises authorization book No.GR200822000009, enjoying 15% preferential tax. In November 2011, the Company was once again certified as high-tech enterprise, and achieved high - tech enterprises authorization book No. GR201122000054, with validity for 3 years.

The Company's other subsidiaries' income tax rate of this year 25%(in 2011:2005%)

#### 4 Taxes

##### (3) Tax payable

<u>The Group</u>	<u>At end of year</u> RMB: Yuan	<u>At beginning of year</u> RMB: Yuan
Value-added tax payable	265,540,778.00	2,410,840.95
Operating tax payable	499,470.75	1,278,935.05
Income tax payable	75,614,092.40	3,669,339.40
Urban maintenance and construction tax and extra charges of education funds payable	31,924,829.86	2,152,914.19
Others payable	6,122,358.91	9,624,429.67
Total	379,701,529.92	19,136,459.26

<u>This Company</u>	<u>At end of year</u> RMB: Yuan	<u>At beginning of year</u> RMB: Yuan
Value-added tax payable	264,047,560.56	-
Operating tax payable	217,164.35	1,234,235.05
Income tax payable	73,192,334.19	-
Urban maintenance and construction tax and extra charges of education funds payable	31,711,766.99	1,858,249.27
Others payable	5,470,629.92	9,518,126.54
Total	374,639,456.01	12,610,610.86

#### 5 Combined Financial Statement

(1) The branch companies which has been contained in scope of this company's combined financial statement on Dec. 31, 2012 are as follows:

(a) Branch company got by combination through different controlling enterprises.

<u>Name of company</u>	<u>This company's direct and indirect Share holding rate</u>	<u>This company's direct and indirect Voting right rate</u>	<u>Registration capital</u>	<u>Investment sum</u>	<u>Class</u>	<u>Type of company</u>	<u>Audit Agreement</u>
			yuan	yuan		Note a	Note b
Chongqing Changchun passenger rail vehicle co., Ltd. ("Chongqing Changchun passenger")	51%	51%	200,000,000.00	102,686,732.02	Four class	Cisborder non-financial branch company	Standard



## 5 Combined Financial Statement (Continued)

(1) The branch companies which has been contained in scope of this company's combined financial statement on Dec. 31, 2012 are as follows: (Continued)

### (b) Subsidiaries obtained through establishment.

<u>Name of company</u>	<u>This company's direct and indirect share holding rate</u>	<u>This company's direct and indirect Voting right rate</u>	<u>Registration capital</u> Yuan	<u>Investment sum</u> Yuan	<u>Class</u>	<u>Type of company</u> Note a	<u>Audit Agreement</u> Note b
Changchun passenger rail vehicle science and technology development Co., Ltd. ("science and technology company")	52.73%	52.73%	11,000,000.00	5,800,000.00	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle imports and exports Co., Ltd. ("Imports and Exports Company")	95%	95%	20,000,000.00	19,110,373.63	Four class	Cisborder non-financial branch company	Standard
Changchun passenger rail vehicle Parts Sale Co., Ltd. ("Parts Company")	100%	100%	10,000,000.00	10,000,000.00	Four class	Cisborder non-financial branch company	Standard

The registered capital and its changes of a subsidiary:

<u>Company Name</u>	<u>Balance at beginning of year</u> RMBY	<u>Increase during the year</u> RMBY	<u>Decrease during the year</u> RMBY	<u>Balance at end of year</u> RMBY
Changchun CRC Railway Vehicle Parts Sales Limited Liability Company ("Parts Company")	800,000.00	9,200,000.00	-	10,000,000.00

The subsidiary, Parts Company, in May 2012 increased the registered capital by CNY 9.2 million, which is subscribed by the Company. Registered capital of the subsidiary is changed to CNY 10 million, Jilin Anhong Certified Public Accountants issued the capital verification report (JAHYZ[2012] No. 032).

6 Currency Capital

<u>This group</u>	<u>Balance at the end of year</u>		<u>Balance at beginning of year</u>	
	Original currency	RMB /	Original currency	RMB /
		Equivalent RMB		Equivalent RMB
	Yuan	Yuan	Yuan	Yuan
Cash				
RMB		112,555.54		115,068.92
Bank deposit				
RMB		245,169,901.12		282,686,390.03
Dollar	37,372,161.72	234,902,722.49	7,668,273.09	48,317,021.93
Euro	1,992,186.35	16,570,209.18	10,035,885.18	81,917,912.78
Yen	21,559,530.00	1,574,902.11	9,580,990.00	777,047.03
HK Dollar	14,273,106.98	11,573,345.41	12,233,831.75	9,917,967.40
Total		509,903,635.85		423,731,408.09

On Dec. 31, 2012, 1 HKD was converted into RMB 0.8109 Yuan (2011: 0.8107 Yuan); 1 USD was converted into RMB 6.2855 Yuan (2011: 6.3009 Yuan); 1 EURO was converted into RMB 8.3176 Yuan (2011: 8.1625 Yuan); 1 YEN as converted into RMB 0.0731 Yuan (2011: 0.0811 Yuan) ;

<u>This company</u>	<u>Balance at the end of year</u>		<u>Balance at beginning of year</u>	
	Original currency	RMB /	Original currency	RMB /
		Equivalent RMB		Equivalent RMB
	Yuan	Yuan	Yuan	Yuan
Cash				
RMB		79,499.02		74,857.08
Bank deposit				
RMB		128,397,676.79		225,863,255.36
Dollar	37,367,456.36	234,873,146.95	7,663,534.11	48,287,162.09
Euro	663,891.83	5,521,986.68	7,779,142.46	63,497,250.33
Yen	20,559,527.00	1,501,852.89	8,580,998.00	695,943.87
HK Dollar	14,205,467.05	11,518,502.95	12,233,831.75	9,917,967.40
Total		381,892,665.28		348,336,436.13

On Dec. 31, 2012, 1 HKD was converted into RMB 0.8109 Yuan (2011: 0.8107 Yuan); 1 USD was converted into RMB 6.2855 Yuan (2011: 6.3009 Yuan); 1 EURO was converted into RMB 8.3176 Yuan (2011: 8.1625 Yuan); 1 YEN as converted into RMB 0.0731 Yuan (2011: 0.0811 Yuan) ;

## 7 Bill Receivable

<u>This group</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	37,988,433.33	76,680,704.00
Total	37,988,433.33	76,680,704.00
<u>This company</u>	<u>Paper Balance at the end of year</u> RMB Yuan	<u>Paper Balance at beginning of year</u> RMB Yuan
Bank acceptance draft	22,100,000.00	66,680,704.00
Total	22,100,000.00	66,680,704.00

Bills receivable before will all become due in one year.

By Dec. 31, 2012, total amount of bills of this group and this company endorsed in the current year but not due is RMB 168,010.558.13 Yuan.

## 8 Account Receivable

(1) Account receivable in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginnin of year</u> RMB Yuan
Related company receivable	632,893,799.35	364,766,877.30
Other customers	4,647,293,233.52	2,884,247,161.73
Subtotal	5,280,187,032.87	3,249,014,039.03
Reduce: bad account reserve	76,250,614.58	12,658,909.49
Total	5,203,936,418.29	3,236,355,129.54



## 8 Account Receivable(Continued)

(1) Account receivable in according to customer type is analyzed as follows: (Continued)

<u>This company</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginnin of year</u> RMB Yuan
Related company receivable	586,156,875.27	477,811,101.29
Other related companies receivable	608,505,101.58	352,492,475.22
Other customers	4,032,897,301.34	2,496,131,206.45
Subtotal	5,227,559,278.19	3,326,434,782.96
Reduce: bad account reserve	74,633,738.54	12,456,160.05
Total	5,152,925,539.65	3,313,978,622.91

(2) Age of accounts receivable and provision for bad debts are analyzed as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>				<u>Amount at the Beginning of the Year</u>			
	Book Balance		Provision for Bad Debts		Book Balance		Provision for Bad Debts	
	RMB Yuan	Percentag e %	RMB Yuan	Percentag e %	RMB Yuan	Percentag e %	RMB Yuan	Percentag e %
Group Total								
Account receivable for drawing provision of bad debts	5,280,187,032.87	100%	76,250,614.58	1.44%	3,249,014,039.03	100%	12,658,909.49	0.39%
Total	5,280,187,032.87	100%	76,250,614.58	1.44%	3,249,014,039.03	100%	12,658,909.49	0.39%

Percentage in book balance should be calculated with the account receivable at the end of the year that is divided by total account receivable; and percentage of provision for bad debts should be calculated with the withdrawn provision for bad debts of the account receivable at the end of the year that is divided by the account receivable at the end of the year.

Account receivable for provision of bad debts withdrawn with the combination test method:

<u>This Group</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance		Provision for Bad Debts	Book Balance		Provision for Bad Debts
	RMB Yuan	Percentag e %	RMB Yuan	RMB Yuan	Percentag e %	RMB Yuan
Within 1 year (inclusive 1 year)	4,621,981,596.46	87.53%	-	3,154,473,870.58	97.09%	-
1-2 years (inclusive 2 years)	608,891,651.42	11.53%	60,889,165.14	62,768,591.25	1.93%	6,276,859.12
2-3 years (inclusive 3 years)	31,061,851.66	0.59%	6,212,370.33	31,725,352.31	0.98%	6,345,070.46
Above 3 years	18,251,933.33	0.35%	9,149,079.11	46,224.89	0.00%	36,979.91
Total	5,280,187,032.87	100%	76,250,614.58	3,249,014,039.03	100%	12,658,909.49

Account age shall be calculated from the day when accounts receivable are confirmed.

## 8 Accounts receivable (continued)

(2) Age of accounts receivable and provision for bad debts are analyzed as shown below (continued)

Item concerning provision of bad debts withdrawn in full within the accounts receivables of this group is the spare part business balance amounting to RMB 46,224.89 Yuan.

It has no accounts receivable generated from related transaction that has been cancelled actually this year.

It has no overdue notes receivable transferred into accounts receivable this year.

This company	Amount at the End of the Year				Amount at the Beginning of the Year			
	Book Balance		Provision for Bad Debts		Book Balance		Provision for Bad Debts	
	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB	Yuan
			e %			e %		e %
Group Total								
Account receivable for drawing provision of bad debts	<u>5,227,559,278.19</u>		<u>100%</u>	<u>74,633,738.54</u>	<u>1.43%</u>	<u>3,326,434,782.96</u>	<u>100%</u>	<u>12,456,160.05</u>
Total	<u>5,227,559,278.19</u>		<u>100%</u>	<u>74,633,738.54</u>	<u>1.43%</u>	<u>3,326,434,782.96</u>	<u>100%</u>	<u>12,456,160.05</u>

Percentage in book balance should be calculated with the account receivable at the end of the year that is divided by total account receivable; and percentage of provision for bad debts should be calculated with the withdrawn provision for bad debts of the account receivable at the end of the year that is divided by the account receivable at the end of the year.

Account receivable for provision of bad debts withdrawn with the combination test method:

This company	Amount at the End of the Year			Amount at the Beginning of the Year		
	Book Balance		Provision for Bad Debts	Book Balance		Provision for Bad Debts
	RMB	Yuan	Percentag	RMB	Yuan	Percentag
			e %			e %
Within 1 year (inclusive 1 year)	4,583,403,057.05		87.68%	-		-
1-2 years (inclusive 2 years)	595,381,229.65		11.39%	59,538,122.97		1.86%
2-3 years (inclusive 3 years)	31,049,975.37		0.59%	6,209,995.07		0.94%
Above 3 years	<u>17,725,016.12</u>		<u>0.34%</u>	<u>8,885,620.50</u>		<u>0.00%</u>
Total	<u>5,227,559,278.19</u>		<u>100%</u>	<u>74,633,738.54</u>		<u>100%</u>

Account age shall be calculated from the day when accounts receivable are confirmed.

Item concerning provision of bad debts withdrawn in full within the accounts receivables of this company is the spare part business balance amounting to RMB 46,224.89 Yuan.

It has no accounts receivable generated from related transaction that has been cancelled actually this year.

It has no overdue notes receivable transferred into accounts receivable this year.

## 9 Advanced Payment Account

(1) Advanced payment account in according to customer type is analyzed as follows:

<u>This group</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment related company	170,951,700.07	251,785,625.05
Other customers	809,255,333.06	1,287,089,903.24
Subtotal	980,207,033.13	1,538,875,528.29
Reduce: bad account reserve	327,106.32	-
Total	979,879,926.81	1,538,875,528.29

<u>This Company</u>	<u>Amount at the end of year</u> RMB Yuan	<u>Amount at beginning of year</u> RMB Yuan
Advanced payment	170,951,700.07	251,785,625.05
Other related company		
Other customers	806,755,800.18	1,279,624,688.92
Subtotal	977,707,500.25	1,531,410,313.97
Reduce: bad account reserve	327,106.32	-
Total	977,380,393.93	1,531,410,313.97

(2) Account age of advance payment and provision for bad debts are analyzed as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance		Provision for Bad Debts	Book Balance		Provision for Bad Debts
	RMB Yuan	Percentage %	RMB Yuan	RMB Yuan	Percentage %	RMB Yuan
Within 1 year (inclusive 1 year)	976,935,939.96	99.67%	-	1,538,875,528.29	100%	-
1-2 years (inclusive 2 years)	3,271,063.17	0.33%	327,106.32	-	-	-
Total	980,207,033.13	100%	327,106.32	1,538,875,528.29	100%	-

Account age shall be calculated from the day when advance payment is confirmed.

Advance payment of this group with account age exceeding 1 year refers mainly to the advance payment for engineering equipment.



## 9 Advance payment (continued)

(2) Account age of advance payment and provision for bad debts are analyzed as shown below (continued)

<u>This company</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance		Provision for Bad Debts	Book Balance		Provision for Bad Debts
	RMB Yuan	Percentage %	RMB Yuan	RMB Yuan	Percentage %	RMB Yuan
Within 1 year (inclusive 1 year)	974,436,437.08	99.67%	-	1,531,410,313.97	100%	-
1-2 years (inclusive 2 years)	<u>3,271,063.17</u>	<u>0.33%</u>	<u>327,106.32</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total	<u>977,707,500.25</u>	<u>100%</u>	<u>327,106.32</u>	<u>1,531,410,313.97</u>	<u>100%</u>	<u>-</u>

Account age shall be calculated from the day when advance payment is confirmed.

Advance payment of this company with account age exceeding 1 year refers mainly to the advance payment for engineering equipment.

## 10 Other receivables

(1) Other receivables are analyzed according to customer classification, as shown below:

<u>This Group</u>	<u>Amount at the End of the Year</u>	<u>Amount at the Beginning of the Year</u>
	RMB Yuan	Year RMB Yuan
Receivable from related company	76,946.87	-
Other customers	<u>52,257,645.77</u>	<u>125,777,396.16</u>
Subtotal	52,334,592.64	125,777,396.16
Less: Provision for bad debts	<u>1,116,919.18</u>	<u>6,707,054.45</u>
Total	<u>51,217,673.46</u>	<u>119,070,341.71</u>
<u>This company</u>	<u>Amount at the End of the Year</u>	<u>Amount at the Beginning of the Year</u>
	RMB Yuan	Year RMB Yuan
Other customers	<u>48,500,831.67</u>	<u>119,771,451.32</u>
Subtotal	48,500,831.67	119,771,451.32
Less: Provision for bad debts	<u>1,011,009.64</u>	<u>6,654,360.96</u>
Total	<u>47,489,822.03</u>	<u>113,117,090.36</u>

## 10 Other receivables (continued)

(2) Account age of other receivables and provision for bad debts are analyzed as shown below:

This Group	Amount at the End of the Year					Amount at the Beginning of the Year				
	Book Balance		Provision for Bad Debts			Book Balance		Provision for Bad Debts		
	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB
	e %		e %			e %		e %		
Group Total										
Other										
receivables for										
drawing provision										
of bad debts	<u>52,334,592.64</u>	<u>100%</u>	<u>1,116,919.18</u>	<u>2.13%</u>	<u>125,777,396.16</u>	<u>100%</u>	<u>6,707,054.45</u>	<u>5.33%</u>		
Total	<u>52,334,592.64</u>	<u>100%</u>	<u>1,116,919.18</u>	<u>2.13%</u>	<u>125,777,396.16</u>	<u>100%</u>	<u>6,707,054.45</u>	<u>5.33%</u>		

Percentage in book balance should be calculated with the other receivables at the end of the year that is divided by total receivables; and percentage of provision for bad debts should be calculated with the withdrawn provision for bad debts of the other receivable at the end of the year that is divided by the other receivable at the end of the year.

Other receivables for provision of bad debts withdrawn with the combination test method:

This Group	Amount at the End of the Year				Amount at the Beginning of the Year			
	Book Balance		Provision for Bad Debts		Book Balance		Provision for Bad Debts	
	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB	Yuan
	e %		e %		e %		e %	
Within 1 year (inclusive 1 year)	45,662,733.86	87.25%	-	-	84,159,076.05	66.97%	-	-
1-2 years (inclusive 2 years)	5,458,501.45	10.44%	545,850.15		19,307,615.19	15.35%	1,930,761.53	
2-3 years (inclusive 3 years)	802,860.37	1.53%	160,572.07		21,851,603.81	17.37%	4,370,320.77	
Above 3 years	<u>410,496.96</u>	<u>0.78%</u>	<u>410,496.96</u>		<u>459,101.11</u>	<u>0.37%</u>	<u>405,972.15</u>	
Total	<u>52,334,592.64</u>	<u>100.00%</u>	<u>1,116,919.18</u>		<u>125,777,396.16</u>	<u>100.00%</u>	<u>6,707,054.45</u>	

Account age shall be calculated from the day when other receivables are confirmed.

In other receivables of this group, the item of provision for bad debts withdrawn in full refers to the advance money of RMB 410,496.96 Yuan.

It has no other receivable that has been cancelled actually this year.

It has no advance payment transferred into other receivable this year.

This company	Amount at the End of the Year					Amount at the Beginning of the Year				
	Book Balance		Provision for Bad Debts			Book Balance		Provision for Bad Debts		
	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB	Yuan	Percentag	RMB
	e %		e %			e %		e %		
Group Total										
Other										
receivables for										
drawing provision										
of bad debts	<u>48,500,831.67</u>	<u>100.00%</u>	<u>1,011,009.64</u>	<u>2.08%</u>	<u>119,771,451.32</u>	<u>100.00%</u>	<u>6,654,360.96</u>	<u>5.56%</u>		
Total	<u>48,500,831.67</u>	<u>100.00%</u>	<u>1,011,009.64</u>	<u>2.08%</u>	<u>119,771,451.32</u>	<u>100.00%</u>	<u>6,654,360.96</u>	<u>5.56%</u>		

## 10 Other receivables (continued)

(2) Account age of other receivables and provision for bad debts are analyzed as shown below (continued)

Percentage in book balance should be calculated with the other receivables at the end of the year that is divided by total receivables; and percentage of provision for bad debts should be calculated with the withdrawn provision for bad debts of the other receivable at the end of the year that is divided by the other receivable at the end of the year.

Other receivables for provision of bad debts withdrawn with the combination test method:

This company	Amount at the End of the Year			Amount at the Beginning of the Year		
	Book Balance		Provision for Bad Debts	Book Balance		Provision for Bad Debts
	RMB Yuan	Percentage %	RMB Yuan	RMB Yuan	Percentage %	RMB Yuan
Within 1 year (inclusive 1 year)	42,888,068.31	88.43%	-	78,291,984.76	65.37%	-
1-2 years (inclusive 2 years)	4,399,406.03	9.07%	439,940.61	19,265,218.03	16.08%	1,926,521.81
2-3 years (inclusive 3 years)	802,860.37	1.66%	160,572.07	21,803,751.57	18.20%	4,360,750.32
Above 3 years	<u>410,496.96</u>	<u>0.85%</u>	<u>410,496.96</u>	<u>410,496.96</u>	<u>0.34%</u>	<u>367,088.83</u>
Total	<u>48,500,831.67</u>	<u>100.00%</u>	<u>1,011,009.64</u>	<u>119,771,451.32</u>	<u>100.00%</u>	<u>6,654,360.96</u>

Account age shall be calculated from the day when other receivables are confirmed.

In other receivables of this company, the item of provision for bad debts withdrawn in full refers to the advance money of RMB 410,496.96 Yuan.

It has no other receivable that has been cancelled actually this year.

It has no advance payment transferred into other receivable this year.

## 11 Inventory

This Group	Amount at the End of the Year			Amount at the Beginning of the Year		
	Book Balance	Falling Price	Book Value	Book Balance	Falling Price	Book Value
	RMB Yuan	Reserves	RMB Yuan	RMB Yuan	Reserves	RMB Yuan
Raw material	3,020,711,857.40	-	3,020,711,857.40	4,243,443,413.29	-	4,243,443,413.29
Self-made semi-finished products and the products in progress	5,801,074,491.87	13,031,792.07	5,788,042,699.80	8,621,196,311.22	34,209,550.25	8,586,986,760.97
Commodity stocks (finished products)	34,202,737.35	-	34,202,737.35	35,439,839.68	-	35,439,839.68
Turnover material (packing material, low-value consumables, etc.)	9,097,670.73	-	9,097,670.73	10,761,503.99	-	10,761,503.99
Others	<u>31,977,949.60</u>	<u>-</u>	<u>31,977,949.60</u>	<u>41,121,125.43</u>	<u>-</u>	<u>41,121,125.43</u>
Total	<u>8,897,064,706.95</u>	<u>13,031,792.07</u>	<u>8,884,032,914.88</u>	<u>12,951,962,193.61</u>	<u>34,209,550.25</u>	<u>12,917,752,643.36</u>

This group has no capitalized amount for borrowing expenses in the balance of inventory at the end of the year.

This group has no inventory used for guarantee at the end of the year.



## 11 Inventory (continued)

<u>This company</u>	<u>Amount at the End of the Year</u>			<u>Amount at the Beginning of the Year</u>		
	Book Balance	Falling Price	Book Value	Book Balance	Falling Price	Book Value
	RMB Yuan	Reserves	RMB Yuan	RMB Yuan	Reserves	RMB Yuan
		RMB Yuan			RMB Yuan	
Raw material	2,951,212,903.77	-	2,951,212,903.77	4,208,135,018.37	-	4,208,135,018.37
Self-made semi-finished products and the products in progress	5,733,500,731.33	13,031,792.07	5,720,468,939.26	8,477,122,302.45	34,209,550.25	8,442,912,752.20
Commodity stocks (finished products)	-	-	-	-	-	-
Turnover material (packing material, low-value consumables, etc.)	9,097,670.73	-	9,097,670.73	10,761,503.99	-	10,761,503.99
Others	<u>31,977,949.60</u>	<u>-</u>	<u>31,977,949.60</u>	<u>41,121,125.43</u>	<u>-</u>	<u>41,121,125.43</u>
Total	<u>8,725,789,255.43</u>	<u>13,031,792.07</u>	<u>8,712,757,463.36</u>	<u>12,737,139,950.24</u>	<u>34,209,550.25</u>	<u>12,702,930,399.99</u>

This company has no capitalized amount for borrowing expenses in the balance of inventory at the end of the year.

This company has no inventory used for guarantee at the end of the year.

Falling price reserves of inventory are analyzed as follow:

<u>This Group and This Company</u>	<u>Book Balance at the Beginning of the Year</u>	<u>Amount Increased in the Current Year</u>	<u>Amount Decreased in the Current Year</u>			<u>Book Balance at the End of the Year</u>
			Return back	Re-sale	Other decreases	
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Self-made semi-finished products and the products in progress	<u>34,209,550.25</u>	<u>44,159,597.80</u>	<u>-</u>	<u>65,337,355.98</u>	<u>-</u>	<u>13,031,792.07</u>
Total	<u>34,209,550.25</u>	<u>44,159,597.80</u>	<u>-</u>	<u>65,337,355.98</u>	<u>-</u>	<u>13,031,792.07</u>

## 12 Other Current Asset

<u>This Group</u>	<u>Book Value at the End of the Year</u>	<u>Book Value at the Beginning of the Year</u>
	RMB Yuan	RMB Yuan
VAT to be deducted	665,584.72	45,782,925.91
Advance payment of enterprise income tax	-	10,341,824.63
Advance payment of other taxes and fees	<u>-</u>	<u>211,288.00</u>
Total	<u>665,584.72</u>	<u>56,336,038.54</u>

## 12 Other Current Asset(Continued)

<u>This company</u>	<u>Book Value at the End of the Year</u> RMB Yuan	<u>Book Value at the Beginning of the Year</u> RMB Yuan
VAT to be deducted	-	20,539,055.95
Advance payment of enterprise income tax	-	10,341,824.63
Total	-	30,880,880.58

## 13 Long-term Share Right Investment

<u>This group</u>	<u>Paper balance at beginning of year</u> RMB Yuan	<u>Current increase sum</u> RMB Yuan	<u>Current decrease sum</u> RMB Yuan	<u>Paper balance at The end of year</u> RMB Yuan
Long-term share right Investment				
-Invest on co-operation company	153,869,369.30	1,166,840.60	-	155,036,209.90
-Invest on associated companies	-	9,800,000.00	813,123.06	8,986,876.94
-Invest on other companies	24,726,588.62	-	-	24,726,588.62
Total	178,595,957.92	10,966,840.60	813,123.06	188,749,675.46

<u>This company</u>	<u>Paper balance at beginning of year</u> RMB Yuan	<u>Current increase sum</u> RMB Yuan	<u>Current decrease sum</u> RMB Yuan	<u>Paper balance at The end of year</u> RMB Yuan
Long-term share right Investment				
-Invest on branch company	128,397,105.65	9,200,000.00	-	137,597,105.65
-Invest on co-operation company	153,869,369.30	1,166,840.60	-	155,036,209.90
-Invest on other companies	24,726,588.62	-	-	24,726,588.62
Total	306,993,063.57	10,366,840.60	-	317,359,904.17

Details on every branch company, please see note 5(1).

### 13 Long-term Share Right Investment (Continued)

(1) On Dec. 31, 2012, this group and this company's analyzed on main co-operation company investment are as follows:

Co-operation company	Registered Place	Business Nature	Registered Capital		This group/ company Share holding rate	This group/ company in investment unit's Voting right rate	Balance in the end of year		Current year	
			RMB	10K Yuan			Total asset sum	Total debt sum	Total operation income sum	Net profit (亏损)
							RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Changchun Bombardier Rail Vehicle Co., Ltd	Changchun	Manufacturing Industry	RMB 23,945		50%	50%	1,370,905,992.90	1,061,466,962.89	483,342,896.82	2,333,681.20

Important accounting policy, accounting evaluation of co-operation and this group & this company have no serious difference.



(2) On Dec. 31, 2012, investments to main associated companies made by this group are analyzed as follows:

<u>Name of Associated Company</u>	<u>Registered Place</u>	<u>Nature of Business</u>	<u>Registered Capital</u> RMB 10K Yuan	<u>Shareholding Proportion of This Group</u>	<u>Proportion of Voting Rights of This Group in the Invested Units</u>	<u>Ending Balance</u> Total Net Assets RMB Yuan	<u>Current Year</u>	
							<u>Total Revenue</u> RMB Yuan	<u>Net Loss</u> RMB Yuan
Chongqing CNR Sifang Institute Science & Technology Co., Ltd.	Chongqing	Manufacturing industry	2,000	49%	49%	18,326,371.33	9,885,715.86	(1,673,628.67)

(3) Major equity investment details calculated as per cost accounting

This Group and This Company

<u>Name of Invested Organization</u>	<u>Initial Investment Cost</u> RMB Yuan	<u>Balance at the Beginning of the Year</u> RMB Yuan	<u>Increase in This Year</u> RMB Yuan	<u>Decrease in This Year</u> RMB Yuan	<u>Balance at the End of the Year</u> RMB Yuan	<u>Cash Bonus in This Year</u> RMB Yuan
Teheran Vehicles Manufacturing Co.	24,726,588.62	24,726,588.62	-	-	24,726,588.62	-

13 Long-term equity investment (continued)

(4) Major equity investment accounted with equity method

This Group and This Company

<u>Name of Invested Organization</u>	<u>Initial Investment Cost</u> RMB Yuan	<u>Balance at the Beginning of the Year</u> RMB Yuan	<u>Increase in This Year</u> RMB Yuan	<u>Decrease in This Year</u> RMB Yuan	<u>Balance at the End of the Year</u> RMB Yuan	<u>Cash Bonus in This Year</u> RMB Yuan
Changchun CRC-Bombardier Railway Vehicles Co., Ltd.	83,491,832.10	153,869,369.30	1,166,840.60	-	155,036,209.90	-

## 14 Fixed assets

<u>This Group</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased in</u> <u>the Current Year</u> RMB Yuan	<u>Amount Decreased in</u> <u>the Current Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Costs:				
House and building structure	2,598,142,456.81	1,805,656,280.36	-	4,403,798,737.17
Machinery equipment	2,306,388,909.12	778,938,444.87	9,153,547.67	3,076,173,806.32
Transportation facilities	77,660,541.74	19,637,693.49	495,367.10	96,802,868.13
Electronic equipment	-	3,138,587.76	4,400.00	3,134,187.76
Office equipment	135,077,967.66	54,139,162.17	565,753.67	188,651,376.16
Others	47,565,378.50	5,834,222.46	-----	53,399,600.96
Total	<u>5,164,835,253.83</u>	<u>2,667,344,391.11</u>	<u>10,219,068.44</u>	<u>7,821,960,576.50</u>
Accumulated depreciation:				
House and building structure	438,466,782.63	138,881,452.51	-	577,348,235.14
Machinery equipment	644,363,959.45	228,456,253.72	8,731,601.18	864,088,611.99
Transportation facilities	46,663,652.22	12,042,950.71	429,694.46	58,276,908.47
Electronic equipment	-	1,828,871.64	1,948.68	1,826,922.96
Office equipment	55,502,730.73	26,068,787.43	538,770.37	81,032,747.79
Others	12,051,911.39	5,689,520.08	-----	17,741,431.47
Total	<u>1,197,049,036.42</u>	<u>412,967,836.09</u>	<u>9,702,014.69</u>	<u>1,600,314,857.82</u>
Book value:				
House and building structure	2,159,675,674.18			3,826,450,502.03
Machinery equipment	1,662,024,949.67			2,212,085,194.33
Transportation facilities	30,996,889.52			38,525,959.66
Electronic equipment	-			1,307,264.80
Office equipment	79,575,236.93			107,618,628.37
其它	<u>35,513,467.11</u>			<u>35,658,169.49</u>
Total	<u>3,967,786,217.41</u>			<u>6,221,645,718.68</u>

In 2012, the original values of fixed assets of this group transferred from construction in progress are RMB 2,638,873,425.76 Yuan.

On Dec. 31, 2012, the original values of fixed assets of this group with depreciation being withdrawn completely but being used continuously are RMB 356,305,189.38 Yuan.

On Dec. 31, 2012, this group has no major fixed assets that are kept temporarily idle.

In 2012, the original values, net values and income of discarded fixed assets of this group are RMB 10,219,068.44 Yuan, 517,053.75 Yuan, and 100,709.79 Yuan, respectively.

In 2012, in the newly increased accumulated depreciations of this group, the depreciation expenses withdrawn for the current year are RMB 412,967,836.09 Yuan.

On Dec. 31, 2012, this group has no fixed assets used for mortgage and guarantee.

On Dec. 31, 2012, this group has no major fixed assets ready for disposal.



#### 14 Fixed assets (continued)

<u>This company</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased in</u> <u>the Current Year</u> RMB Yuan	<u>Amount Decreased in</u> <u>the Current Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Costs:				
House and building structure	2,419,612,342.00	1,705,902,656.34	-	4,125,514,998.34
Machinery equipment	2,195,851,032.16	768,017,085.93	9,133,047.67	2,954,735,070.42
Transportation facilities	61,521,304.88	19,637,693.49	285,853.10	80,873,145.27
Office equipment	133,763,094.49	52,138,634.92	473,584.07	185,428,145.34
Others	<u>17,107,841.59</u>	<u>-</u>	<u>-</u>	<u>17,107,841.59</u>
Total	<u>4,827,855,615.12</u>	<u>2,545,696,070.68</u>	<u>9,892,484.84</u>	<u>7,363,659,200.96</u>
Accumulated depreciation:				
House and building structure	431,951,968.90	132,755,674.12	-	564,707,643.02
Machinery equipment	640,370,527.01	218,285,200.10	8,729,815.99	849,925,911.12
Transportation facilities	39,039,768.38	9,781,366.01	277,220.16	48,543,914.23
Office equipment	54,636,003.25	24,851,540.13	450,769.17	79,036,774.21
Others	<u>6,466,894.15</u>	<u>4,474,078.11</u>	<u>-</u>	<u>10,940,972.26</u>
Total	<u>1,172,465,161.69</u>	<u>390,147,858.47</u>	<u>9,457,805.32</u>	<u>1,553,155,214.84</u>
Book value:				
House and building structure	1,987,660,373.10			3,560,807,355.32
Machinery equipment	1,555,480,505.15			2,104,809,159.30
Transportation facilities	22,481,536.50			32,329,231.04
Office equipment	79,127,091.24			106,391,371.13
Others	<u>10,640,947.44</u>			<u>6,166,869.33</u>
Total	<u>3,655,390,453.43</u>			<u>5,810,503,986.12</u>

In 2012, the original values of fixed assets of this company transferred from construction in progress are RMB 2,526,491,228.70 Yuan.

On Dec. 31, 2012, the original values of fixed assets of this company with depreciation being withdrawn completely but being used continuously are RMB 351,465,024.47 Yuan.

On Dec. 31, 2012, this company has no major fixed assets that are kept temporarily idle.

In 2012, the original values, net values and income of discarded fixed assets of this company are RMB 9,892,484.84 Yuan, 434,679.52 Yuan, and 60,059.69 Yuan, respectively.

In 2012, in the newly increased accumulated depreciations of this company, the depreciation expenses withdrawn for the current year are RMB 390,147,858.47 Yuan.

On Dec. 31, 2012, this company has no fixed assets used for mortgage and guarantee.

On Dec. 31, 2012, this company has no major fixed assets ready for disposal.

# 14 Fixed assets (continued)

On Dec. 31, 2012, fixed assets rented by this group and this company by way of financing lease are as shown below:

<u>This Group and This Company</u>	<u>Machinery equipment</u>	<u>Transportation facilities</u>	<u>Office equipment Others</u>	<u>Total</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Book Value at the End of the Year				
Gross book value	81,497,968.25	-	-	81,497,968.25
Less: Accumulated depreciation	12,389,920.67	-	-	12,389,920.67
Less: Depreciation reserves	-	-	-	-
Net book value	<u>69,108,047.58</u>	<u>-</u>	<u>-</u>	<u>69,108,047.58</u>
Book Value at the Beginning of the Year				
Gross book value	835,398,410.30	17,514,218.33	18,425,877.64	871,338,506.27
Less: Accumulated depreciation	79,969,729.60	3,211,645.25	3,447,477.61	86,628,852.46
Less: Depreciation reserves	-	-	-	-
Net book value	<u>755,428,680.70</u>	<u>14,302,573.08</u>	<u>14,978,400.03</u>	<u>784,709,653.81</u>

15 Construction in progress

On Dec. 31, 2012, book balance of construction in progress of this group at the end of the year is given below with the following ten largest items:

<u>Name of project</u>	<u>Budget amount</u> RMB K Yuan	<u>Percentage of</u> <u>Project Input in</u> <u>Budget (%)</u>	<u>Balance at the</u> <u>beginning of the</u> <u>year</u> RMB Yuan	<u>Increase in This</u> <u>Year</u> RMB Yuan	<u>Fixed assets passed</u> <u>on</u> RMB Yuan	<u>Other decreases</u> RMB Yuan	<u>Balance at the end</u> <u>of the year</u> RMB Yuan	<u>Interest</u> <u>Capitalization</u> <u>Accumulated</u> <u>Amount</u> RMB Yuan	<u>Where, Interest</u> <u>Capitalization</u> <u>Amount of This</u> <u>Year</u> RMB Yuan	<u>Capital Source</u>	<u>Work Progress</u>
Total	7,153,789	-	2,799,536,554.02	766,201,152.49	2,638,873,425.76	-	926,864,280.75	12,408,240.11	39,928,878.50	-	-
Where, 350km/h EMU manufacturing platform construction project	2,198.400	96%	1,036,453,809.41	128,154,947.36	957,560,308.20	-	207,048,448.57	1,656,513.53	11,932,900.99	Special loan	96%
Improved high speed EMU manufacturing platform construction project	985.000	96%	675,105,312.17	31,232,599.56	555,592,876.02	-	150,745,035.71	1,296,346.19	9,682,492.55	Special loan	96%
Platform research and development project	121,764	85%	66,569,235.64	33,263,656.59	1,013,321.78	-	98,819,570.45	-	-	Self-owned fund	85%
Urban rail vehicles capacity improvement technological transformation project	366,000	90%	150,677,915.14	23,152,050.24	77,410,531.36	-	96,419,434.02	3,870,552.32	4,811,416.48	Special loan	90%
High speed train system integrated national engineering lab construction project	129,000	96%	90,302,573.51	27,329,387.27	24,383,681.50	-	93,248,279.28	-	-	Self-owned fund	96%
200km/h EMU manufacturing technology import, digestion and absorption, and localization technology transformation project	299,200	96%	144,076,735.68	14,722,531.01	112,473,557.70	-	46,325,708.99	4,116,895.41	7,190,446.65	Special loan	96%
High speed EMU bogie manufacturing system technology transformation project	500,000	96%	74,966,389.26	1,729,980.82	48,819,561.49	-	27,876,808.59	-	-	Month capital	96%
Export railway vehicle technology transformation project	350,000	96%	133,054,527.67	10,294,933.64	116,953,063.54	-	26,396,397.77	1,392,630.13	5,976,381.74	Special loan	96%
Export railway vehicle technology transformation project	380,000	96%	71,137,799.90	52,668.59	53,221,611.24	-	17,968,857.25	-	-	Self-owned fund	96%
EMU maintenance project	856,500	2%	14,627.93	17,869,996.99	-	-	17,884,624.92	-	-	Self-owned fund	2%

Capitalization rate of capitalized amount of this group used to determine borrowing expenses this year is 5.63%-6.46% (2011: 5.87%-5.97%).



## 16 Intangible assets

<u>This group</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Cost or assessment value:				
Land use right	1,160,446,024.16	256,502,749.30	-	1,416,948,773.46
Patent right	813,431.91	214,592.15	-	1,028,024.06
Non-patent technology	20,180,000.00	-	-	20,180,000.00
Trademark right	14,175.00	-	-	14,175.00
Software	144,021,088.20	6,507,671.12	-----	150,528,759.32
Total	<u>1,325,474,719.27</u>	<u>263,225,012.57</u>	-----	<u>1,588,699,731.84</u>
Accumulated amortization:				
Land use right	61,998,691.63	26,145,886.38	-	88,144,578.01
Patent right	21,304.14	101,014.05	-	122,318.19
Non-patent technology	9,166,666.88	2,008,000.01	-	11,174,666.89
Trademark right	12,266.81	517.52	-	12,784.33
Software	83,528,221.55	21,186,891.01	-----	104,715,112.56
Total	<u>154,727,151.01</u>	<u>49,442,308.97</u>	-----	<u>204,169,459.98</u>
Book value:				
Land use right	1,098,447,332.53			1,328,804,195.45
Patent right	792,127.77			905,705.87
Non-patent technology	11,013,333.12			9,005,333.11
Trademark right	1,908.19			1,390.67
Software	60,492,866.65			45,813,646.76
Total	<u>1,170,747,568.26</u>			<u>1,384,530,271.86</u>

On Dec. 31, 2010, this Group has no capitalized amount for borrowing expenses in the book value of intangible assets.

In 2010, this Group has no intangible assets of uncertain service life.

On Dec. 31, 2010, this Group has no intangible assets used for mortgage and guarantee.

## 16 Intangible assets

<u>This Company</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Cost or assessment value:				
Land use right	1,129,326,305.58	230,195,073.18	-	1,359,521,378.76
Non-patent technology	180,000.00	-	-	180,000.00
Trademark right	14,175.00	-	-	14,175.00
Software	<u>142,703,317.34</u>	<u>6,146,360.00</u>	<u>-----</u>	<u>148,849,677.34</u>
Total	<u>1,272,223,797.92</u>	<u>236,341,433.18</u>	<u>-----</u>	<u>1,508,565,231.10</u>
Accumulated amortization:				
Land use right	59,851,570.96	25,129,001.90	-	84,980,572.86
Non-patent technology	166,666.72	7,999.97	-	174,666.69
Trademark right	12,266.81	517.52	-	12,784.33
Software	<u>83,036,729.59</u>	<u>20,884,077.70</u>	<u>-----</u>	<u>103,920,807.29</u>
Total	<u>143,067,234.08</u>	<u>46,021,597.09</u>	<u>-----</u>	<u>189,088,831.17</u>
Book value:				
Land use right	1,069,474,734.62			1,274,540,805.90
Non-patent technology	13,333.28			5,333.31
Trademark right	1,908.19			1,390.67
Software	<u>59,666,587.75</u>			<u>44,928,870.05</u>
Total	<u>1,129,156,563.84</u>			<u>1,319,476,399.93</u>

On Dec. 31, 2010, This Company has no capitalized amount for borrowing expenses in the book value of intangible assets.

In 2010, This Company has no intangible assets of uncertain service life.

On Dec. 31, 2010, This Company has no intangible assets used for mortgage and guarantee.

## 17 Deferred Income Tax Asset and Debt

(1) Deferred income tax assets or liabilities and corresponding deductible or taxable temporary differences:

This Group	Book Balance at the End of the Year		Book Balance at the Beginning of the Year	
	Deferred Income Tax Assets RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deductible taxable temporary differences RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deferred Income Tax Assets RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deductible taxable temporary differences RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)
Deferred income tax assets				
Provision for bad debts	11,826,474.55	77,694,640.08	2,930,438.88	19,365,963.94
Inventory falling price reserves	1,954,768.81	13,031,792.07	5,131,432.53	34,209,550.25
Deductible losses	2,140,000.00	8,560,000.00	-	-
Employee remuneration	1,932,805.81	12,885,372.09	212,768.41	1,418,456.08
Estimated liabilities	37,414,520.58	249,430,137.17	23,948,356.09	159,655,707.32
Profit and loss offset for internal sales not realized	12,660,572.03	70,862,352.60	5,196,139.67	20,784,558.67
Government subsidies	2,250,000.00	15,000,000.00	2,250,000.00	15,000,000.00
Total	<u>70,179,141.78</u>	<u>447,464,294.01</u>	<u>39,669,135.58</u>	<u>250,434,236.26</u>

This company	Book Balance at the End of the Year		Book Balance at the Beginning of the Year	
	Deferred Income Tax Assets RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deductible taxable temporary differences RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deferred Income Tax Assets RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)	Deductible taxable temporary differences RMB Yuan (Taxable temporary differences are filled in with “-”Liabilities are filled in with “-”)
Deferred income tax assets				
Provision for bad debts	11,395,778.15	75,971,854.50	2,866,578.15	19,110,521.01
Inventory falling price reserves	1,954,768.81	13,031,792.07	5,131,432.53	34,209,550.25
Employee remuneration	1,932,805.81	12,885,372.09	212,768.41	1,418,456.08
Estimated liabilities	37,414,520.58	249,430,137.17	23,948,356.09	159,655,707.32
Government subsidies	2,250,000.00	15,000,000.00	2,250,000.00	15,000,000.00
Total	<u>54,947,873.35</u>	<u>366,319,155.83</u>	<u>34,409,135.18</u>	<u>229,394,234.66</u>

(2) Deferred income tax assets details

	This Group		This company	
	Balance at the End of the Year	Balance at the Beginning of the Year	Balance at the End of the Year	Balance at the Beginning of the Year
	RMB YuanRMB Yuan	RMB YuanRMB Yuan	RMB YuanRMB Yuan	RMB YuanRMB Yuan
Deductible losses	41,643,971.03	78,833,816.99	-	-
Total	<u>41,643,971.03</u>	<u>78,833,816.99</u>	-	-



## 17 Deferred Income Tax Asset and Debt (Continued)

(3) Deductible losses of deferred income tax assets unconfirmed shall become due in the following years:

	This group		This Company	
	Balance at the end of the year	Balance at the beginning of the year	Balance at the end of the year	Balance at the beginning of the year
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
2014	-	19,145,879.91	-	-
2015	15,660,610.15	33,704,576.20	-	-
2016	<u>25,983,360.88</u>	<u>25,983,360.88</u>	-	-
Total	<u>41,643,971.03</u>	<u>78,833,816.99</u>	<u>-</u>	<u>-</u>

According to the accounting policy as indicated in Note 3 (12), some subsidiaries of this company unlikely obtain future taxable profits that can be used to deduct all the accumulated deductible losses, and therefore, this group has not yet determine the deferred income tax assets for the accumulated deductible losses of RMB 41,643,971.03 Yuan (2011: RMB 78,833,816.99 Yuan). According to the current tax laws, these deductible losses can be used to deduct the future taxable profits within a period not exceeding 5 years dated from the year when these losses happened (i.e. 2010).

## 18 Preparation for impairment of assets

On Dec. 31, 2012, the asset impairment situations of this group are summarized as follow:

Item	Note	Balance at the beginning of the year	Withdrawn this year	Decrease in This Year		Balance at the end of the year
		RMB Yuan	RMB Yuan	Return back RMB Yuan	Re-sale RMB Yuan	RMB Yuan
Account receivable	8	12,658,909.49	69,390,405.04	(5,798,699.95)	-	76,250,614.58
Advance payment	9	-	327,106.32	-	-	327,106.32
Other receivables	10	6,707,054.45	2,050,998.08	(7,641,133.35)	-	1,116,919.18
Inventory	11	<u>34,209,550.25</u>	<u>44,159,597.80</u>	<u>-</u>	<u>(65,337,355.98)</u>	<u>13,031,792.07</u>
Total		<u>53,575,514.19</u>	<u>115,928,107.24</u>	<u>(13,439,833.30)</u>	<u>(65,337,355.98)</u>	<u>90,726,432.15</u>

On Dec. 31, 2012, the asset impairment situations of this company are summarized as follow:

Item	Note	Balance at the beginning of the year	Withdrawn this year	Decrease in This Year		Balance at the end of the year
		RMB Yuan	RMB Yuan	Return back RMB Yuan	Re-sale RMB Yuan	RMB Yuan
Account receivable	8	12,456,160.05	67,956,002.84	(5,778,424.35)	-	74,633,738.54
Advance payment	9	-	327,106.32	-	-	327,106.32
Other receivables	10	6,654,360.96	1,997,782.03	(7,641,133.35)	-	1,011,009.64
Inventory	11	<u>34,209,550.25</u>	<u>44,159,597.80</u>	<u>-</u>	<u>(65,337,355.98)</u>	<u>13,031,792.07</u>
Total		<u>53,320,071.26</u>	<u>114,440,488.99</u>	<u>(13,419,557.70)</u>	<u>(65,337,355.98)</u>	<u>89,003,646.57</u>

Please refer to notes to all related assets items for impairment loss confirmation reasons of all kinds of assets.

## 19. Short-term Loan

<u>This group</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB	<u>Balance at beginning of year</u> RMB/ Equivalent RMB
	yuan	yuan
Credit loan	1,230,500,000.00	2,872,805,884.26
Total	1,230,500,000.00	2,872,805,884.26
<u>This company</u>	<u>Balance at the end of year</u> RMB/ Equivalent RMB	<u>Balance at beginning of year</u> RMB/ Equivalent RMB
	yuan	yuan
Credit loan	1,070,000,000.00	2,767,805,884.26
Total	1,070,000,000.00	2,767,805,884.26

On Dec. 31, 2012, this group and this company do not have short-term loan which is not paid back in time.

## 20 Notes payable

<u>This group</u>	<u>Balance at the end of the year</u> RMB Yuan	<u>Balance at the beginning of the year</u> RMB Yuan
Bank acceptance bills	2,010,770,150.08	2,002,849,370.36
Commercial acceptance bills	200,000.00	=
Total	<u>2,010,970,150.08</u>	<u>2,002,849,370.36</u>

<u>This Company</u>	<u>Balance at the end of the year</u> RMB Yuan	<u>Balance at the beginning of the year</u> RMB Yuan
Bank acceptance bills	1,930,041,837.12	1,896,865,044.68
Commercial acceptance bills	200,000.00	=
Total	<u>1,930,241,837.12</u>	<u>1,896,865,044.68</u>

All the above balances are the notes payable within one year.

## Account Payable

<u>This group</u>	<u>Paper balance at the end of year</u> RMB Yuan	<u>Paper balance at beginning of year</u> RMB Yuan
Within one year (include one year )	7,132,061,317.71	7,197,201,976.24
One to two year (include two years)	177,910,921.36	554,799,631.65
Two to three years (include three years)	8,394,796.54	5,172,276.19
Over three years	2,006,117.52	1,792,944.38
Total	7,320,373,153.13	7,758,966,828.46

On Dec. 31, 2012, account payable of this Group with account age exceeding three years is RMB 2,006,117.52 Yuan, which is the unpaid account payable for quality warranty of material.

<u>This Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (include one year )	6,793,751,697.74	6,936,384,392.51
One to two year (include two years)	138,903,926.91	551,402,576.92
Two to three years (include three years)	6,424,736.54	4,406,274.65
Over three years	-	-
Total	6,939,080,361.19	7,492,193,244.08

On Dec. 31, 2012, this company has no account payable with account age exceeding three years.

## Advance Receipt

<u>This group</u>	<u>Paper balance at the end of year</u> RMB Yuan	<u>Paper balance at beginning of year</u> RMB Yuan
Within one year (including one year)	1,474,036,359.74	2,190,997,405.06
More than one year	1,678,707,863.65	1,998,468,350.11
Total	3,152,744,223.39	4,189,465,755.17



## 22 Advance Receipt (Continued)

<u>This Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (including one year)	1,468,798,069.25	2,190,650,006.79
More than one year	<u>1,678,707,863.65</u>	<u>1,998,468,350.11</u>
Total	<u>3,147,505,932.90</u>	<u>4,189,118,356.90</u>

On Dec. 31, 2012, the advance receipt of this group and this company with account age exceeding one year is RMB 1,678,707,863.65 Yuan, which is mainly the advance receipt for goods for the new urban rail project construction. The project construction period is long, and therefore, the contract implementation has not been completed yet.

## 23 Employee Compensation Payable

<u>This group</u>	<u>Book Balance at the</u> <u>Beginning of the Year</u> RMB Yuan	<u>Amount Increased</u> <u>This Year</u> RMB Yuan	<u>Amount Paid This</u> <u>Year</u> RMB Yuan	<u>Book Balance at the</u> <u>End of the Year</u> RMB Yuan
Wages, bonuses, allowances and subsidies	5,488,573.24	1,044,127,180.56	1,044,478,024.20	5,137,729.60
Employee welfare expenses	-	113,700,869.81	113,700,869.81	-
Social insurance charges	11,307,642.30	353,084,447.98	358,594,476.77	5,797,613.51
Insurance premium for basic medical treatment	(4,049,047.29)	60,829,326.96	61,960,634.61	(5,180,354.94)
Insurance premium for additional medical treatment	15,712,155.82	5,058,894.75	9,236,118.75	11,534,931.82
Basic old-age insurance premium	589,643.16	186,274,917.19	186,260,740.53	603,819.82
Annuity payment (additional old-age insurance premium)	-	67,825,039.68	67,825,039.68	-
Unemployment insurance expenses	26,429.05	18,451,085.61	18,421,520.55	55,994.11
Industrial injury insurance expenses	(579,306.44)	8,599,170.13	8,742,729.90	(722,866.21)
Birth insurance expenses	(392,232.00)	6,046,013.66	6,147,692.75	(493,911.09)
Housing fund	74,634.01	133,679,559.72	133,603,263.72	150,930.01
Trade union funds and employee education funds	18,398,137.62	36,713,654.94	36,788,581.87	18,323,210.69
Housing subsidies	137,118,268.03	-	14,754,465.87	122,363,802.16
Early retirement benefits (i) -Some additional retirement benefits payable within one year (i)	17,471,000.00	14,296,063.01	17,561,063.01	14,206,000.00
- Some payable within one year	6,957,000.00	15,186,760.28	14,657,760.28	7,486,000.00
Others	-	<u>67,280,997.72</u>	<u>67,280,997.72</u>	-
Total	<u>196,815,255.20</u>	<u>1,778,069,534.02</u>	<u>1,801,419,503.25</u>	<u>173,465,285.97</u>

## 23 Employee Compensation Payable (continued)

<u>This Company</u>	<u>Book Balance at the Beginning of the Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Paid This Year</u> RMB Yuan	<u>Book Balance at the End of the Year</u> RMB Yuan
Wages, bonuses, allowances and subsidies	3,412,000.00	1,004,856,200.76	1,008,268,200.76	-
Employee welfare expenses	-	109,954,504.04	109,954,504.04	-
Social insurance charges	10,654,789.84	346,414,796.32	352,021,635.12	5,047,951.04
Insurance premium for basic medical treatment	(4,069,792.45)	59,008,493.14	60,184,803.76	(5,246,103.07)
Insurance premium for additional medical treatment	15,712,155.82	5,058,894.75	9,236,118.75	11,534,931.82
Basic old-age insurance premium	-	182,118,610.53	182,118,610.53	-
Annuity payment (additional old-age insurance premium)	-	67,825,039.68	67,825,039.68	-
Unemployment insurance expenses	-	18,071,198.46	18,071,198.46	-
Industrial injury insurance expenses	(581,400.11)	8,430,477.55	8,579,004.86	(729,927.42)
Birth insurance expenses	(406,173.42)	5,902,082.21	6,006,859.08	(510,950.29)
Housing fund	-	132,184,646.00	132,184,646.00	-
Trade union funds and employee education funds	17,711,682.76	35,150,381.03	36,316,378.44	16,545,685.35
Housing subsidies	137,118,268.03	-	14,754,465.87	122,363,802.16
Early retirement benefits (i) -Some additional retirement benefits payable within one year (i)	17,471,000.00	14,296,063.01	17,561,063.01	14,206,000.00
-Some payable within one year	6,957,000.00	15,186,760.28	14,657,760.28	7,486,000.00
Others	-	66,214,855.58	66,214,855.58	-
Total	<u>193,324,740.63</u>	<u>1,724,258,207.02</u>	<u>1,751,933,509.10</u>	<u>165,649,438.55</u>

### (i) Early retirement benefits and additional retirement benefits

<u>This group and this company</u>	<u>Book Balance at the End of the Year</u> RMB Yuan	<u>Book Balance at the Beginning of the Year</u> RMB Yuan
Early retirement benefits	51,384,000.00	70,150,000.00
Additional retirement benefits	51,622,000.00	62,769,000.00
Less: Some payable within one year		
-Early retirement benefits	14,206,000.00	17,471,000.00
-Additional retirement benefits	7,486,000.00	6,957,000.00
Employee remuneration payable (non-current liabilities)	<u>81,314,000.00</u>	<u>108,491,000.00</u>

## 23 Employee remuneration payable (continued)

The above liabilities of this group and this company are evaluated by the Independent Actuary Mercer Consultants (Shanghai) Co., Ltd. with method of expected cost per unit. Main actuary assumptions used for evaluation of the above liabilities on the balance sheet date are analyzed as shown below:

	<u>Dec. 31, 2012</u>	<u>Dec. 31, 2011</u>
Discount rate		
-Early retirement benefits	3.1%	2.90%
-Additional retirement benefits	3.5%-3.9%	3.3%-3.7%
Annual growth rate of living allowances	9.5%	9.5%
Annual salary growth rate during early retirement period	8%	8%
Annual growth rate of medical expenses	7%-9%	8.00%-10.00%
Estimated average life in the future	Refers to 2005' China Life Insurance Experience Life Table (2000-2003)	

## 24 Other Account Payable

<u>This Group</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (include one year )	408,726,258.25	306,797,422.51
One to two year (include two years)	106,356,840.59	4,255,538.45
Two to three years (include three years)	3,840,411.89	1,577,249.81
Over three years	12,688,009.87	16,306,416.64
Total	531,611,520.60	328,936,627.41

<u>This Company</u>	<u>Year-end Balance</u> RMB yuan	<u>Year-beginning Balance</u> RMB yuan
Within one year (include one year )	397,641,297.61	291,720,310.97
One to two year (include two years)	105,695,178.21	732,246.18
Two to three years (include three years)	705,450.62	1,577,249.81
Over three years	12,688,009.87	16,306,416.64
Total	516,729,936.31	310,336,223.60

On Dec. 31, 2012, other payables of this group and this company with account age exceeding three years are RMB 12,688,009.87 Yuan, which are mainly unpaid account for project engineering warranty.



## 25 Non-current liabilities due within one year

<u>This group and this company</u>	Note	<u>Book Balance at the End of the Year</u> RMB Yuan	<u>Book Balance at the Beginning of the Year</u> RMB Yuan
Long-term loan due within one year		129,610,000.00	130,500,000.00
Where, credit loan		129,610,000.00	130,500,000.00
Long-term payables due within one year	(1)	<u>15,209,542.32</u>	<u>36,742,863.36</u>
Total		<u>144,819,542.32</u>	<u>167,242,863.36</u>

(1) Long-term payables and accounts due within one year are analyzed as follow:

<u>This group and this company</u>	<u>2012</u> RMB Yuan	<u>2011</u> RMB Yuan
Accrued financial lease outlay	15,209,542.32	36,742,863.36

Accrued financial lease outlay due within one year is the net amount after the leaser account payable deducts unconfirmed financing expenses.

<u>This group and this company</u>	<u>2012</u> RMB Yuan	<u>2011</u> RMB Yuan
Leaser account payable	18,966,655.50	84,705,681.99
Less: unconfirmed financing expenses	<u>3,757,113.18</u>	<u>47,962,818.63</u>
Accrued financial lease outlay	<u>15,209,542.32</u>	<u>36,742,863.36</u>

## 26 Estimated liabilities

<u>This group</u>	<u>Book Balance at the Beginning of the Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Book Balance at the End of the Year</u> RMB Yuan
Product quality assurance/warranty	160,038,037.39	187,811,483.62	152,906,638.39	194,942,882.62
Onerous contract	.....-	<u>56,057,849.25</u>	.....-	<u>56,057,849.25</u>
Total	<u>160,038,037.39</u>	<u>243,869,332.87</u>	<u>152,906,638.39</u>	<u>251,000,731.87</u>

## 26 Estimated liabilities (continued)

<u>This Company</u>	<u>Book Balance at the Beginning of the Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Book Balance at the End of the Year</u> RMB Yuan
Product quality assurance/warranty	159,655,707.32	185,824,311.39	152,107,730.79	193,372,287.92
Onerous contract	-	56,057,849.25	-	56,057,849.25
Total	<u>159,655,707.32</u>	<u>241,882,160.64</u>	<u>152,107,730.79</u>	<u>249,430,137.17</u>

This group makes commitments to provide after-sale service and repair for locomotives, vehicles and parts/components sold, repaired and transformed, and be responsible for repair and replacements of any defective products within the warranty period. The estimated liabilities for the above product quality assurance/warranty are withdrawn based on the actual conditions of previous repair and return of goods, and estimated product quality assurance expenses to be undertaken.

## 27 Long-term loan

<u>This group</u>	<u>Book Balance at the End of the Year</u> RMB/Equivalent	<u>Book Balance at the Beginning of the Year</u> RMB/Equivalent
Credit borrowing	996,420,000.00	1,091,680,000.00
Total	<u>996,420,000.00</u>	<u>1,091,680,000.00</u>

<u>This Company</u>	<u>Book Balance at the End of the Year</u> RMB/Equivalent	<u>Book Balance at the Beginning of the Year</u> RMB/Equivalent
Credit borrowing	996,420,000.00	1,091,680,000.00
Total	<u>996,420,000.00</u>	<u>1,091,680,000.00</u>

## 27 Long-term loan (continued)

Due date calculated as per undiscounted contract cash amount (inclusive interest calculated as per contract interest rate (current interest rate on Dec. 31 in case of floating interest rate)) is analyzed as shown below:

<u>This Company</u>	<u>Book Balance at the End of the Year</u> RMB Yuan	<u>Book Balance at the Beginning of the Year</u> RMB Yuan
Within 1 year (inclusive 1 year)	196,253,198.21	208,149,475.62
1-2 years (inclusive 2 years)	252,350,046.65	199,289,331.37
2-3 years (inclusive 3 years)	239,501,259.45	190,569,786.16
Above 3 years	<u>675,863,417.67</u>	<u>1,020,161,569.26</u>
Total undiscounted contract cash flow	<u>1,363,967,921.98</u>	<u>1,618,170,162.41</u>
Book value	<u>1,126,030,000.00</u>	<u>1,222,180,000.00</u>

On Dec. 31, 2012, this group and this company have no long-term loan that is due but not paid.

## 28 Long-term account payable

<u>This group and this company</u>	<u>Balance at the end of the year</u> RMB Yuan	<u>Balance at the beginning of the year</u> RMB Yuan
Accrued financial lease outlay	57,737,682.18	839,886,055.03
Less: Accrued financial lease outlay due within one year	15,209,542.32	36,742,863.36
Early retirement benefits and additional retirement benefits	<u>81,314,000.00</u>	<u>108,491,000.00</u>
Total	<u>123,842,139.86</u>	<u>911,634,191.67</u>



## 28 Long-term account payable (continued)

On Dec. 31, 2012, the minimum account payable for financing lease of this group and this company are given below:

<u>This group and this company</u>	<u>2012</u> RMB Yuan	<u>2011</u> RMB Yuan
Within 1 year (inclusive 1 year)	18,966,655.50	84,705,681.99
1-2 years (inclusive 2 years)	18,966,655.50	83,168,550.94
2-3 years (inclusive 3 years)	18,966,655.50	765,999,690.83
Above 3 years	<u>9,230,032.92</u>	<u>14,219,415.89</u>
Subtotal	<u>66,129,999.42</u>	<u>948,093,339.65</u>
Less: unconfirmed financing expenses	<u>8,392,317.24</u>	<u>108,207,284.62</u>
Total	<u>57,737,682.18</u>	<u>839,886,055.03</u>

Net amount accrued financial lease outlay due within one year with unconfirmed financing expenses deducted as mentioned above has been disclosed in Note. 25.

## 29 Other non-current liabilities

<u>This group</u>	<u>Balance at the beginning of the year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Balance at the end of the year</u> RMB Yuan
Deferred income (i)	478,756,141.89	267,960,940.00	132,170,689.93	614,546,391.96
Total	<u>478,756,141.89</u>	<u>267,960,940.00</u>	<u>132,170,689.93</u>	<u>614,546,391.96</u>

### (i)Deferred income

<u>This group</u>	<u>Book Balance at the Beginning of the Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Book Balance at the End of the Year</u> RMB Yuan
Special appropriation	251,688,515.68	128,415,500.00	121,798,130.51	258,305,885.17
Discount interest fund	4,799,521.54	-	799,920.26	3,999,601.28
Others	<u>222,268,104.67</u>	<u>139,545,440.00</u>	<u>9,572,639.16</u>	<u>352,240,905.51</u>
Total	<u>478,756,141.89</u>	<u>267,960,940.00</u>	<u>132,170,689.93</u>	<u>614,546,391.96</u>

<u>This Company</u>	<u>Balance at the beginning of the year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Balance at the end of the year</u> RMB Yuan
Deferred income (ii)	473,703,958.21	266,590,940.00	130,052,894.09	610,242,004.12
Total	<u>473,703,958.21</u>	<u>266,590,940.00</u>	<u>130,052,894.09</u>	<u>610,242,004.12</u>

## 29 Other non-current liabilities (continued)

## (ii) Deferred income

<u>This Company</u>	<u>Book Balance at the Beginning of the Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Amount Increased This Year</u> RMB Yuan	<u>Book Balance at the End of the Year</u> RMB Yuan
Special appropriation	246,636,332.00	127,045,500.00	119,680,334.67	254,001,497.33
Discount interest fund	4,799,521.54	-	799,920.26	3,999,601.28
Others	222,268,104.67	139,545,440.00	9,572,639.16	352,240,905.51
Total	<u>473,703,958.21</u>	<u>266,590,940.00</u>	<u>130,052,894.09</u>	<u>610,242,004.12</u>

## 30 Paid-up capital

Structure of registered capital of this company on Dec. 31 is given below:

<u>This group</u>	<u>Balance at the beginning of the year</u>		<u>Increase in This Year</u>	<u>Decrease in This Year</u>	<u>Balance at the end of the year</u>	
	<u>Investment Amount</u> RMB Yuan	<u>Percentage</u>			<u>Investment Amount</u> RMB Yuan	<u>Percentage</u>
China CNR Corporation Ltd.	1,535,679,251.00	73.85%	404,310,656.00	-	1,939,989,907.00	93.29%
Jilin Province Golden Bean Industry Group Co., Ltd.	107,478,046.00	5.17%	-	-	107,478,046.00	5.17%
KTK Group Co., Ltd.	19,679,674.00	0.95%	-	-	19,679,674.00	0.95%
Jiangsu Joint Investment Co., Ltd.	10,600,000.00	0.51%	-	-	10,600,000.00	0.51%
China Railway Science & Technology Development Corporation	1,311,978.00	0.06%	-	-	1,311,978.00	0.06%
Dunhua Forestry Co., Ltd. of Jilin Yanbian Forestry Group	327,995.00	0.02%	-	-	327,995.00	0.02%
Changchun Railway Vehicles Facilities Co., Ltd.	<u>404,310,656.00</u>	<u>19.44%</u>	<u>-</u>	<u>(404,310,656.00)</u>	<u>-</u>	<u>-</u>
Total	<u>2,079,387,600.00</u>	<u>100.00%</u>	<u>404,310,656.00</u>	<u>(404,310,656.00)</u>	<u>2,079,387,600.00</u>	<u>100.00%</u>

### 30 Paid-up capital (continued)

Structure of paid-up capital of this company on Dec. 31 is given below:

<u>This Company</u>	2012		2011	
	<u>RMB Equivalent</u>	<u>%</u>	<u>RMB Equivalent</u>	<u>%</u>
	<u>Amount in Original</u> <u>Currency</u>		<u>Amount in Original</u> <u>Currency</u>	
China CNR Corporation Ltd.	1,939,989,907.00	93.29%	1,535,679,251.00	73.85%
Jilin Province Golden Bean Industry Group Co., Ltd.	107,478,046.00	5.17%	107,478,046.00	5.17%
KTK Group Co., Ltd.	19,679,674.00	0.95%	19,679,674.00	0.95%
Jiangsu Joint Investment Co., Ltd.	10,600,000.00	0.51%	10,600,000.00	0.51%
China Railway Science & Technology Development Corporation	1,311,978.00	0.06%	1,311,978.00	0.06%
Dunhua Forestry Co., Ltd. of Jilin Yanbian Forestry Group	327,995.00	0.02%	327,995.00	0.02%
Changchun Railway Vehicles Facilities Co., Ltd.	-	-	404,310,656.00	19.44%
Total	<u>2,079,387,600.00</u>	<u>100.00%</u>	<u>2,079,387,600.00</u>	<u>100.00%</u>

### 31 Capital reserves

<u>This group</u>	<u>Balance at the beginning of the year</u> RMB Yuan	<u>Increase in This Year</u> RMB Yuan	<u>Decrease in This Year</u> RMB Yuan	<u>Balance at the end of the year</u> RMB Yuan	<u>Reasons and basis for changes</u>
Capital premium	2,403,390,329.55	-	-	2,403,390,329.55	
Other capital reserves	86,338,752.25	914,360.46	-	87,253,112.71	
-Others	86,338,752.25	510,000.00	-	86,848,752.25	Government subsidies
-Equity-settled share-based payment	-	404,360.46	-	404,360.46	Stock ownership incentive
Total	<u>2,489,729,081.80</u>	<u>914,360.46</u>	<u>-</u>	<u>2,490,643,442.26</u>	
<u>This Company</u>	<u>Balance at the beginning of the year</u> RMB Yuan	<u>Increase in This Year</u> RMB Yuan	<u>Decrease in This Year</u> RMB Yuan	<u>Balance at the end of the year</u> RMB Yuan	<u>Reasons and basis for changes</u>
Capital premium	2,363,298,622.20	-	-	2,363,298,622.20	
Other capital reserves	86,338,752.25	404,360.46	-	86,743,112.71	
-Others	86,338,752.25	-	-	86,338,752.25	
-Equity-settled share-based payment	-	404,360.46	-	404,360.46	Stock ownership incentive
Total	<u>2,449,637,374.45</u>	<u>404,360.46</u>	<u>-</u>	<u>2,450,041,734.91</u>	



## 32 Surplus Reserve

<u>The Group and The Company</u>	<u>Year-beginning Balance</u> RMB yuan	<u>This Year's Reductive Amount</u> RMB yuan	<u>This Year's Increased Amount</u> RMB yuan	<u>Year-end Balance</u> RMB yuan	<u>Reasons and basis for changes</u>
Legal surplus reserve fund	<u>205,483,379.66</u>	<u>134,888,823.02</u>	-	<u>340,372,202.68</u>	Profit distribution as per Articles of Association
Total	<u>205,483,379.66</u>	<u>134,888,823.02</u>	-	<u>340,372,202.68</u>	

### 33 Undistributed profits

<u>This group</u>	<u>Amount</u> RMB Yuan
This year's year-beginning balance	1,350,616,420.18
This year's increased amount	1,338,223,493.87
Among which: this year's net profit transferring-in	1,338,223,493.87
This year's reductive amount	1,377,012,205.71
Among which: this year's withdrawn surplus reserve amount	134,888,823.02
This year's distributed cash dividends amount	1,242,123,382.69
	1,311,827,708.34

<u>This Company</u>	<u>Amount</u> RMB Yuan
This year's year-beginning balance	1,383,002,167.98
This year's increased amount	1,348,888,230.16
Among which: this year's net profit transferring-in	1,348,888,230.16
This year's reductive amount	1,377,012,205.71
Among which: this year's withdrawn surplus reserve amount	134,888,823.02
This year's distributed cash dividends amount	1,242,123,382.69
	1,354,878,192.43

Where, distribution of profits approved by the Board of Directors

On Sep. 27, 2012, this Company made a resolution and approved the cash dividend distribution plan for 2010 and 2011 on the shareholders conference. The resolution decided to make cash distribution according to the shareholding proportions of the share holders on Dec. 31, 2011, and total amount to be distributed is RMB 1,242,123,382.69 Yuan.

### 34 Business Incomes

<u>This Group</u>		<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
		<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
		RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Main business		22,614,579,402.32	18,705,530,829.57	23,073,398,676.84	19,710,139,724.81
subtotal					
- New creation		20,507,708,144.42	17,027,855,682.31	20,854,960,374.90	18,149,824,539.55
- Maintenance and remolding		597,962,022.18	564,512,628.37	651,662,793.85	597,425,270.30
- Parts		1,508,909,235.72	1,113,162,518.89	1,566,775,508.09	962,889,914.96
		<u>227,499,324.90</u>	<u>157,071,364.30</u>	<u>316,000,027.44</u>	<u>230,773,917.40</u>
Total		<u>22,842,078,727.22</u>	<u>18,862,602,193.87</u>	<u>23,389,398,704.28</u>	<u>19,940,913,642.21</u>

<u>This Group</u>		<u>This Year's Amount Incurred</u>		<u>Last Year's Amount Incurred</u>	
		<u>Income</u>	<u>Cost</u>	<u>Income</u>	<u>Cost</u>
		RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Main business		23,172,812,550.05	19,354,111,576.12	23,190,057,052.70	19,894,317,793.76
subtotal					
- New creation		20,507,708,144.42	17,107,249,921.04	20,854,960,374.90	18,155,836,065.27
- Maintenance and remolding		558,495,200.99	530,271,840.63	622,671,170.86	574,180,789.87
- Parts		2,106,609,204.64	1,716,589,814.45	1,712,425,506.94	1,164,300,938.62
Other business		<u>212,119,802.57</u>	<u>148,690,434.14</u>	<u>289,372,673.32</u>	<u>217,042,773.43</u>
subtotals					
Total		<u>23,384,932,352.62</u>	<u>19,502,802,010.26</u>	<u>23,479,429,726.02</u>	<u>20,111,360,567.19</u>

### 35 Financial Expenses

<u>This Group</u>	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB Yuan	RMB Yuan
Interest expense	407,335,669.74	316,890,898.76
Unacknowledged financing charges amortization(i)	4,194,000.00	43,189,784.54
Minus: capitalized interest expense (ii)	<u>39,928,878.50</u>	<u>33,057,219.41</u>
Net interest expense	371,600,791.24	327,023,463.89
Interest income of savings	(4,652,590.49)	(8,902,703.85)
Net foreign exchange loss	(1,158,076.50)	85,327,484.89
Other financing charges	<u>27,541,825.87</u>	<u>32,430,744.51</u>
Total	<u>393,331,950.12</u>	<u>435,878,989.44</u>

(i) Financing cost unconfirmed to be amortized as actuarial supplementary retirement benefits and financing cost unconfirmed to the early retirement benefit are within the current term amortization amount.

(ii) Capitalization rate for capitalization of normal borrowing interest of this year is 5.63%-6.46% (2011: 5.87%-5.97%).



### 35 Financial expenses (continued)

This Company	<u>This Year's Amount Incurred</u>	<u>Last Year's Amount Incurred</u>
	RMB yuan	RMB yuan
Interest expense	396,165,801.49	312,038,471.99
Unacknowledged financing charges amortization (i)	4,194,000.00	43,189,784.54
Minus: capitalized interest expense (ii)	<u>39,928,878.50</u>	<u>32,208,329.87</u>
Net interest expense	360,430,922.99	323,019,926.57
Interest income of savings	(4,281,385.82)	(7,919,984.52)
Net foreign exchange loss	(988,404.07)	84,155,370.54
Other financing charges	<u>26,319,819.95</u>	<u>32,223,842.54</u>
Total	<u>381,480,953.05</u>	<u>431,479,155.13</u>

(i) Unconfirmed financing cost amortization is the unconfirmed financing expenses relating to current amortized amount of actuarial additional retirement benefits and early retirements benefits, and the current amortized amount of the unconfirmed financing expenses generated from financing lease.

(ii) Capitalization rate used for determination of capitalization amount of borrowing expenses of this year is 5.63%-6.46% (2011: 5.87%-5.97%).

### 36 Loss from Asset Devaluation

<u>This group</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan
Accounts receivable	58,328,676.14	(461,302.82)
Inventory	<u>44,159,597.80</u>	<u>28,581,863.79</u>
Total	<u>102,488,273.94</u>	<u>28,120,560.97</u>

<u>This Company</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan
Accounts receivable	56,861,333.49	1,041,402.08
Inventory	<u>44,159,597.80</u>	<u>28,581,863.79</u>
Total	<u>101,020,931.29</u>	<u>29,623,265.87</u>

### 37 Investment income

<u>This group</u>	<u>This Year' s Amount Incurred</u> RMB Yuan	<u>Last Year' s Amount Incurred</u> RMB Yuan
Long-term equity investment		
Where, investment income calculated and confirmed with equity method	353,717.54	(17,926,824.97)
investment income calculated and confirmed with cost method	-	276,734.00
Total	<u>353,717.54</u>	<u>(17,650,090.97)</u>

<u>This Company</u>	<u>This Year' s Amount Incurred</u> RMB Yuan	<u>Last Year' s Amount Incurred</u> RMB Yuan
Long-term equity investment		
Where, investment income calculated and confirmed with equity method	1,166,840.60	(17,926,824.97)
investment income calculated and confirmed with cost method	-	15,035,420.86
Investment losses on equity disposal	-	(13,062,533.99)
Total	<u>1,166,840.60</u>	<u>(15,953,938.10)</u>

### 38 Non-operating income

<u>This group</u>	<u>This Year' s Amount Incurred</u> RMB Yuan	<u>Last Year' s Amount Incurred</u> RMB Yuan
Gains from disposal of non-current assets	123,259.67	653,961.55
Where, Gains from disposal of fixed assets	123,259.67	653,961.55
Government subsidies (i)	132,170,689.93	69,214,676.83
Default compensation income	2,817,738.88	8,876,081.10
Other gains	<u>5,879,679.24</u>	<u>2,312,025.68</u>
Total	<u>140,991,367.72</u>	<u>81,056,745.16</u>

### 38 Non-operating income (continued)

This Company	This Year' s Amount Incurred	Last Year' s Amount Incurred
	RMB Yuan	RMB Yuan
Gains from disposal of non-current assets	60,059.69	653,961.55
Where, Gains from disposal of fixed assets	60,059.69	653,961.55
Government subsidies (i)	130,052,894.09	64,508,323.33
Default compensation income	2,646,801.78	8,858,629.10
Other gains	<u>5,054,465.16</u>	<u>1,278,545.60</u>
Total	<u>137,814,220.72</u>	<u>75,299,459.58</u>

#### (i) Government subsidies

	This group		This Company	
	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Research grants	817,795.84	3,982,316.32	-	-
Special appropriation	124,992,254.93	61,088,668.00	123,692,254.93	61,088,668.00
Others	<u>6,360,639.16</u>	<u>4,143,692.51</u>	<u>6,360,639.16</u>	<u>3,419,655.33</u>
Total	<u>132,170,689.93</u>	<u>69,214,676.83</u>	<u>130,052,894.09</u>	<u>64,508,323.33</u>

### 39 Non-operating expenditure

<u>This group</u>	<u>This Year' s Amount Incurred</u>	<u>Last Year' s Amount Incurred</u>
	RMB Yuan	RMB Yuan
Losses from disposal of non-current assets	22,549.88	-
Where, losses from disposal of fixed assets	22,549.88	-
Foreign donations	700,000.00	2,600,000.00
Penalty expenses	9,880.00	32,944,240.59
Estimated contract losses	56,057,849.25	-
Other expenses	<u>24,062,562.26</u>	<u>11,007,520.76</u>
Total	<u>80,852,841.39</u>	<u>46,551,761.35</u>



39 Non-operating expenditure (continued)

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB Yuan	<u>Last Year's Amount Incurred</u> RMB Yuan
Foreign donations	700,000.00	2,600,000.00
Penalty expenses	500.00	32,928,000.00
Estimated contract losses	56,057,849.25	-
Other expenses	<u>23,479,429.73</u>	<u>10,741,957.85</u>
Total	<u>80,237,778.98</u>	<u>46,269,957.85</u>

40 Income Tax Expense

(1) Composition of Income Tax Expense

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Income tax in this year	229,604,551.17	212,213,535.52
Deferred income tax changes	<u>(30,510,006.20)</u>	<u>(15,182,141.81)</u>
Total	<u>199,094,544.98</u>	<u>197,031,393.71</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Income tax in this year	222,167,686.68	198,322,271.54
Deferred income tax changes	<u>(20,538,738.17)</u>	<u>(11,953,831.18)</u>
Total	<u>201,628,948.51</u>	<u>186,368,440.36</u>

40 Income Tax Expense (Continued)

(2) The relationship between income tax expense and accounting profit is as follows:

<u>This Group</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Profit before tax	<u>1,550,069,897.33</u>	<u>1,426,525,929.24</u>
Statutory tax rate	15%	15%
Expected income taxes calculated as per statutory tax rate	<u>232,510,484.60</u>	<u>213,978,889.39</u>
Influence due to subsidiary 's application of different tax rates	2,019,248.26	4,360,857.55
Non-deductible entertainment expenses	1,911,265.15	1,663,141.80
(Profits)/losses of the cooperative/associated company	(53,057.63)	2,647,513.65
Research and development expenses with extra deduction being permitted by tax laws	(25,322,883.33)	(27,700,064.81)
Others	<u>(11,970,512.07)</u>	<u>2,081,056.13</u>
This year' s income tax expenses	<u>199,094,544.98</u>	<u>197,031,393.71</u>

<u>This Company</u>	<u>This Year's Amount Incurred</u> RMB yuan	<u>Last Year's Amount Incurred</u> RMB yuan
Profit before tax	<u>1,550,517,178.67</u>	<u>1,413,356,343.66</u>
Statutory tax rate	15%	15%
Expected income taxes calculated as per statutory tax rate	<u>232,577,576.80</u>	<u>212,003,451.55</u>
Non-deductible entertainment expenses	1,523,265.65	1,273,973.86
( Profits)/losses of the cooperative company	(175,026.09)	433,710.62
Research and development expenses with extra deduction being permitted by tax laws	(25,322,883.33)	(27,700,064.81)
Others	<u>(6,973,984.52)</u>	<u>357,369.14</u>
This year' s income tax expenses	<u>201,628,948.51</u>	<u>186,368,440.36</u>

#### 41 Cash flow statement added information

(1) Net profit is regulated into cash flow for business activities:

<u>This group</u>	<u>This Year' s Amount</u> RMB Yuan	<u>Last Year' s Amount</u> RMB Yuan
Net profits	1,350,975,352.35	1,229,494,535.53
Add: Preparation for impairment of assets	102,488,273.94	28,120,560.97
Fixed assets depreciation	412,967,836.09	315,156,666.58
Amortization of intangible assets	49,442,308.97	44,892,011.49
Amortization of long-term deferred expenses	35,000.00	42,000.00
Net income from disposal of fixed assets	(100,709.79)	(653,961.55)
Financial expenses	381,437,119.19	313,924,523.26
Investment (income)/losses	(353,717.54)	17,650,090.97
Deferred income tax assets increased	(30,510,006.20)	(15,182,141.81)
Inventory decreased/(increased)	3,989,560,130.68	(4,273,523,763.79)
Operating receivables increased	(1,505,335,724.84)	(1,334,917,422.43)
Operating payables (decreased)/increased	(921,415,680.91)	1,715,498,054.06
Others	404,360.46	-
Net cash flow amount generated from operating activities	<u>3,829,594,542.40</u>	<u>(1,959,498,846.72)</u>

<u>This Company</u>	<u>This Year' s Amount</u> RMB Yuan	<u>Last Year' s Amount</u> RMB Yuan
Net profits	1,348,888,230.16	1,226,987,903.30
Add: Preparation for impairment of assets	101,020,931.29	29,623,265.87
Fixed assets depreciation	390,147,858.47	303,045,081.04
Amortization of intangible assets	46,021,597.09	42,033,673.96
Net income from disposal of fixed assets	(60,059.69)	(653,961.55)
Financial expenses	370,255,134.21	308,798,448.30
Investment (income)/losses	(1,166,840.60)	15,953,938.10
Deferred income tax assets increased	(20,538,738.17)	(11,953,831.18)
Inventory decreased/(increased)	3,946,013,338.83	(4,105,946,597.31)
Operating receivables increased	(1,428,462,586.19)	(1,573,021,549.65)
Operating payables (decreased)/increased	(969,496,708.67)	1,778,035,902.62
Others	404,360.46	-
Net cash flow amount generated from operating activities	<u>3,783,026,517.19</u>	<u>(1,987,097,726.50)</u>



#### 41 Cash flow statement added information (continued)

##### (2) Major investment and financing activities not involving cash receipt and disbursement:

<u>This group and this company</u>	<u>This Year' s Amount</u> RMB Yuan	<u>Last Year' s Amount</u> RMB Yuan
Fixed assets under financing lease	19,204,841.98	-

##### (3) Net change in cash and cash equivalents:

	<u>This group</u>		<u>This Company</u>	
	<u>This Year' s</u> <u>Amount</u> RMB Yuan	<u>Last Year' s</u> <u>Amount</u> RMB Yuan	<u>This Year' s</u> <u>Amount</u> RMB Yuan	<u>Last Year' s</u> <u>Amount</u> RMB Yuan
Balance of cash and cash equivalents at the end of the year	509,903,635.85	423,731,408.09	381,892,665.28	348,336,436.13
Less: Balance of cash at the beginning of the year	<u>423,731,408.09</u>	<u>312,115,997.47</u>	<u>348,336,436.13</u>	<u>235,947,238.36</u>
Cash and cash equivalents net increased amount	<u>86,172,227.76</u>	<u>111,615,410.62</u>	<u>33,556,229.15</u>	<u>112,389,197.77</u>

##### (4) Cash and cash equivalents held by this group and this Company are analyzed as given below

	<u>This group</u>		<u>This Company</u>	
	<u>This Year' s</u> <u>Amount</u> RMB Yuan	<u>Last Year' s</u> <u>Amount</u> RMB Yuan	<u>This Year' s</u> <u>Amount</u> RMB Yuan	<u>Last Year' s</u> <u>Amount</u> RMB Yuan
(a) Monetary capital	509,903,635.85	423,731,408.09	381,892,665.28	348,336,436.13
-Cash on hand	112,555.54	115,068.92	79,499.02	74,857.08
-Bank deposit that can be used for payment at any time	509,791,080.31	423,616,339.17	381,813,166.26	348,261,579.05
(b) Monetary capital and cash equivalents balance at the end of the year	<u>509,903,635.85</u>	<u>423,731,408.09</u>	<u>381,892,665.28</u>	<u>348,336,436.13</u>

## 42 Service payment

Expenses for share-based payment incurred in this year are as shown below:

	Note	This Group		This Company	
		<u>2012</u>	<u>2011</u>	<u>2012</u>	<u>2011</u>
		RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Equity-settled share-based payment	(1)	<u>404,360.46</u>	<u>-</u>	<u>404,360.46</u>	<u>-</u>
Total		<u>404,360.46</u>	<u>-</u>	<u>404,360.46</u>	<u>-</u>

The purpose of share-based payment schedule of this group and this company is to get employee's service in return.

### (1) Equity-settled share-based payment

Examined and approved on CNR Shareholders' Conference on Oct. 26, 2012, CNR started to implement stock option plan to the board directors, senior management and core technical persons of CNR and its subsidiaries from Nov. 1, 2012, inclusive 28 senior management staff and core technical persons of this company. CNR has conferred CNR stock options to the 28 senior management staff and core technical persons of this company, who can then subscribe to CNR stock rights at exercise prices of RMB 4.34 Yuan per share. Stock option rights can be exercised after two years from the day of conferring, which become effective on three exercise effectiveness day respectively with proportion of 33%, 33% and 34%, i.e. each exercise effectiveness day shall be the first trading day at expiry of 24 months/2 years, 36 months/3 years and 48 months/4 years in full respectively from the day of conferring, and within 7 years from the day of conferring, they can exercise their rights to make subscription to CNR shares. Each stock option shall endow its holder the rights of common CNR shares. This company may process the share payment trade as the share-based payment for settlement of rights and interests.

This year, total expenses confirmed by this company are RMB 404,360.46 Yuan. Up to Dec. 31, 2012, the accumulated amount of equity-settled share-based payment confirmed by this company in the capital reserves is RMB 404,360.46 Yuan.

#### 43 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments

This group is faced with risks of various financial instruments in daily routines, these risks mainly include:

- Credit risk
- Liquidity risk
- Interest rate risk
- Foreign exchange risk

What follows in this passage is mainly about discussions of the above risk exposure and its cause of formation, risk management objective, policy and process as well as risk metering method and so on.

This group's objective of engaging in risk management is to get appropriate equivalence between risk and income and strive to reduce negative influence of risk on this group's financial performance. Giving this risk management objective, this group has formulated risk management policy so as to distinguish and analyze risk facing this group, set appropriate risk acceptable level and designed relevant internal control procedure so as to supervise the risk level of this group. The group will regularly check and approve these risk management policies and relevant internal control system so as to adapt changes of market situation or this group's operating activities. The internal auditing department of this group also regularly or randomly checks whether the execution of internal control system meets the risk management policies or not.

Credit risks refer to the risks in financial losses that may occur to the other party due to failure of one party to the financial instrument in carrying out its obligations. Credit risk of this group mainly comes from the monetary capital, accounts receivable and derivative financial instruments signed for hedging purpose. The management will continuously inspect exposures of these credit risks.

Monetary capital of this group excluding cash is mainly deposited in the prestige banking institutions, and therefore, the management does not believe existence of any major credit risks, and it is estimated that no loss will be caused to this group due to breach of contract by the other party.

Main customers of this group are the companies that make investment and management to the ministry of railway and local railway organizations. Under normal conditions, This group will not ask the customer to provide securities. To monitor the credit risks of this group, this group will make information analysis of the customers of this group according to the account ages.

Accounts receivable. On Dec. 31 2012 and Dec. 31, 2011, this group and this company have no accounts receivables that are overdue but not decreased in value as assessed with individual method and combination method.

On Dec. 31, 2012, accounts receivables of the first five major customers of this group and this company have respectively taken 37%% and 27%% (2011: 45% and 44%) of total accounts receivables and other receivables of this group and this company, and therefore, this group may envisage certain level centralized credit risks.

The largest credit risk exposure endured by this group is the book amount of each financial asset (inclusive derivative financial instruments) specified in the balance sheet. This group has not yet provided any other guarantee that may incur any credit risk to this group.



43 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments (Continued)

(2)

Liquidity Risk

Liquidity risk refers to the risk of encountering capital shortage when the enterprise is implementing obligations which are related to financial liability. This company and each subsidiary are responsible for their own cash management work, including short-term investment and loan raising of cash surplus and expected cash demand payable (in case that loan exceeds some default top line of authorization, approval should be get from the board of directors of this company). The group's policy is to timely supervise short-term and long-term working capital demands, and whether they are up to the regulations of loan agreement so as to insure of maintaining abundant cash storage and negotiable securities which can be conversed to cash at any time, and obtain enough reserve funds which will be supplied under major financial organizations' promises so as to meet short-term and longer-term working capital demands.

Financial liabilities to be paid within 12 months after the balance sheet date have been already listed in the floating liabilities in the balance sheet. Please see Note 27 for long-term loan repayment schedule and cash flow analysis.

(3)

Interest Rate Risk

Interest bearing financial instruments of fixed interest rate and floating interest rate separately make the group be faced with fair value interest rate risk and cash flow interest rate risk. This group decides the proportion of fixed interest rate and floating interest rate instruments according to the market environment and maintains appropriate fixed and floating interest rate instruments combination through regular moderation and monitoring.

On Dec. 31, the interest accrual financial instruments held by the group and the

(a) company are as follows:

This group	<u>2012</u> RMB Yuan	<u>2011</u> RMB Yuan
Fixed interest rate financial instrument		
Financial liabilities		
-Short-term borrowing	60,500,000.00	185,472,741.62
Floating interest rate financial instrument		
Financial assets		
- Monetary capital	509,791,080.31	423,616,339.17
Financial liabilities		
-Short-term borrowing	1,170,000,000.00	2,687,333,142.64
-Long-term loan due within one year	129,610,000.00	130,500,000.00
-Long-term loan	996,420,000.00	1,091,680,000.00

#### 43 The Risk Analysis, Sensibility Analysis and Fair Value of Financial Instruments (Continued)

##### (3) Interest Rate Risk (Continued)

(a) On Dec. 31, the interest accrual financial instruments held by the group and the company are as follows:

This Company	<u>2012</u> RMB Yuan	<u>2011</u> RMB Yuan
Fixed interest rate financial instrument		
Financial liabilities		
-Short-term borrowing	-	155,472,741.62
Floating interest rate financial instrument		
Financial assets		
- Monetary capital	381,813,166.26	348,261,579.05
Financial liabilities		
-Short-term borrowing	1,070,000,000.00	2,612,333,142.64
-Long-term loan due within one year	129,610,000.00	130,500,000.00
-Long-term loan	996,420,000.00	1,091,680,000.00

##### (b) Sensitivity analysis

By Dec. 31, 2012, under conditions that other variables remain unchanged, assuming that interest rate varies by 40 basic points, it may lead this group and this company to increase/decrease owner's equity by RMB 6,265,534.03 Yuan and RMB 6,168,066.94 Yuan (in 2011: RMB 12,470,798.36 Yuan and RMB 12,381,862.64 Yuan), and to increase/decrease net profit by RMB 6,265,534.03 Yuan and RMB 6,168,066.94 Yuan (in 2011: RMB 12,470,798.36 Yuan and RMB 12,381,862.64 Yuan).

As for financial instruments which are held on the balance sheet date, and make the group or the company is faced with fair value interest rate risk, influences on net profit and owners' rights and interests in the above sensibility analysis are impacts generated after assumption of interest rate change on the balance sheet date and re-measurement of above-mentioned financial instruments on the basis of new interest rate. As for floating interest rate non-deriving instruments which are held on the balance sheet date, and make the group or the company is faced with cash flow interest rate risk, influences on net profit and owners' rights and interests in the above sensibility analysis are the above-mentioned interest rate change's impacts on interest expenses or income which is estimated on an annual basis. Last year's analysis is based on the same assumption and method.

## (4) Foreign Exchange Risk

As for account receivables and account payables which are not valued with recording currency, in case of short-term unbalanced situation, this group will buy and sell foreign currencies according to market exchange rate in necessity so as to insure of maintaining net risk exposure on a acceptable level.

- (a) On Dec. 31, this group's foreign exchange risk exposures of each foreign currency assets liability items are as follows. In consideration of the presentation, risk exposure amount will be displayed in RMB, and amortized computation will be conducted in the spot rate on balance sheet date.

This Group	2012				RMB Yuan
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Rmb
Monetary capital	234,902,722.49	16,570,209.18	1,574,902.11	11,573,345.41	-
Account receivables	440,085,074.34	1,122,387,767.71	-	860,469.61	-
Short-term loan	(9,892,891.70)	(129,121,266.15)	(9,872,944.44)	(12,977,032.43)	-
Account payables	-	-	-	-	-
Exposure net amount of balance sheet	665,094,905.13	1,009,836,710.74	(8,298,042.33)	(543,217.41)	-

This Group	2011				RMB Yuan
	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Rmb
Monetary capital	48,317,021.93	81,917,912.78	777,047.03	9,917,967.40	-
Account receivables	3,818,244.58	2,743,355.77	-	-	-
Short-term loan	(388,341,164.26)	-	(19,464,720.00)	-	-
Account payables	(10,133,011.57)	(170,313,977.99)	(10,115,302.52)	-	(34,060.14)
Exposure net amount of balance sheet	(346,338,909.32)	(85,652,709.44)	(28,802,975.49)	9,917,967.40	(34,060.14)



## (4) Foreign exchange risk

(a) Foreign exchange risk exposures of all the foreign currency assets liability items of this group and this company on Dec. 31 are given below. In consideration of statement report, the risk exposure amounts are given in RMB Yuan, and the conversion is made as per spot rate on the balance sheet date.  
(continued)

2012					
<u>This Group</u>	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound Sterling
Monetary capital	234,873,146.95	5,521,986.68	1,501,852.89	11,518,502.95	-
Account receivables	440,085,074.34	1,118,355,332.68	-	-	-
Short-term loan	-	-	-	-	-
Account payables	(1,075,444.77)	(128,397,978.55)	(8,357,996.66)	(12,977,052.43)	-
Exposure net amount of balance sheet	673,882,776.52	995,569,340.81	(6,856,143.77)	(1,458,529.48)	-
2011					
<u>This Company</u>	U.S. Dollar	Euro	Japanese Yen	Hong Kong Dollar	Pound Sterling
Monetary capital	48,287,162.09	63,497,250.33	695,943.87	9,917,967.40	-
Account receivables	3,818,244.58	-	-	-	-
Short-term loan	(388,341,164.26)	-	(19,464,720.00)	-	-
Account payables	(1,136,236.66)	(168,918,704.99)	(8,291,004.97)	-	(34,060.14)
Exposure net amount of balance sheet	(337,371,994.25)	(105,421,454.66)	(27,059,781.10)	9,917,967.40	(34,060.14)

(b) The Group and The Company's Applicable Exchange Rate Analysis of RMB against Foreign Currencies is as Follows:

	This Year's Amount		Last Year's Amount	
	Average Exchange Rate	Medial Exchange rate on the Report Date	Average Exchange Rate	Medial Exchange rate on the Report Date
U.S. Dollar	6.2974	6.2885	6.4618	6.3009
Euro	8.2401	8.3176	8.4845	8.1625
Japanese Yen	0.0771	0.0730	0.0812	0.0811
Hong Kong Dollar	0.8108	0.8109	0.8308	0.8107
Pound	9.9364	10.1611	9.9649	9.7116

## (4) Foreign Exchange Risk (Continued)

## (c) Sensibility Analysis

Assume that except the exchange rate, other risk variables remain constant, exchange rate changes against U.S. Dollar, Euro, Japanese Yen and Hong Kong Dollar, which were made by the group and the company on Dec. 31 and caused appreciation of the RMB by 1%, would lead to the following increment (reduction) situations of owners' rights and interests and net profit. This influence is displayed in RMB after amortized computation according to the spot rate on balance sheet date.

	Owners' Rights and Interests		Profit and loss	
	This Group Equivalent RMB	This Company Equivalent RMB	This Group Equivalent RMB	This Company Equivalent RMB
<b>Dec. 31, 2012</b>				
U.S. Dollar	(5,662,094.56)	(5,728,003.60)	(5,662,094.56)	(5,728,003.60)
Euro	(8,569,344.67)	(8,462,339.40)	(8,569,344.67)	(8,462,339.40)
Japanese Yen	69,091.46	58,277.22	69,091.46	58,277.22
Hong Kong Dollar	5,532.66	12,397.50	5,532.66	12,397.50
Pound	-	-	-	-
<b>Dec. 31, 2011</b>				
U.S. Dollar	2,934,913.81	2,867,661.95	2,934,913.81	2,867,661.95
Euro	747,816.78	896,082.36	747,816.78	896,082.36
Japanese Yen	243,082.10	230,008.14	243,082.10	230,008.14
Hong Kong Dollar	(84,302.72)	(84,302.72)	(84,302.72)	(84,302.72)
Pound	289.51	289.51	289.51	289.51

On Dec.31, under the premise of assuming other variables remaining constant, RMB exchange rate changes against U.S. Dollar, Euro, Japanese Yen and Hong Kong Dollar caused depreciation of the RMB by 1%, would lead to the changes of owners' rights and interests as well as profit and loss, which are of the same amount but different direction with amounts displayed in the above form.

The above-mentioned sensibility analysis are obtained by assuming exchange rate changes on the balance sheet date and re-measuring financial instruments which are held by the group and faced with foreign exchange risk on the basis of new exchange rate. Above analysis do not include amortized computation differences of foreign currency report forms. Last year's analysis is based on the same assumption and method.

#### 44 Commitment

##### (a) Capital commitment

On Dec. 31, the capital commitments of this group and this company are as shown below:

	This Group		This Company	
	<u>2012</u>	<u>2011</u>	<u>2012</u>	<u>2011</u>
	RMB Yuan	RMB Yuan	RMB Yuan	RMB Yuan
Fixed assets purchasing contract signed or being implemented				
Where, House and building structure	488,979,288.66	639,868,707.63	486,476,475.04	614,598,316.65
Machinery equipment	42,966,658.63	130,614,302.64	26,745,229.66	111,260,610.97
其它	<u>23,600.00</u>	<u>159,778,924.64</u>	<u>--</u>	<u>23,600.00</u>
Total	<u>531,969,547.29</u>	<u>930,263,152.91</u>	<u>513,221,704.70</u>	<u>725,860,145.62</u>

##### (b) Operating and lease commitment

According to irrevocable operation and lease agreement, the minimum lease payment payable by this group and this company after Dec. 31 is indicated below:

<u>This Group and This Company</u>	<u>2012</u>	<u>2011</u>
	RMB	RMB
Within 1 year (inclusive 1 year)	<u>-</u>	<u>515,900.00</u>
Total	<u><u>-</u></u>	<u><u>515,900.00</u></u>

#### 45 Non-adjusting events after balance sheet date

As examined and approved on the 11<sup>th</sup> Session of the 2<sup>nd</sup> Board Meeting held by CNR on Jan. 16, 2013 and the 1<sup>st</sup> Session of the 4<sup>th</sup> Board Meeting held by this company on Jan. 21, 2013, this company has signed an investment cooperation agreement with Hubei Marine United Development and Investment Group Co., Ltd. and Wuhan Metro Group Co., Ltd. to jointly invest and establish Wuhan CNR CRC Railway Equipment Co., Ltd. (hereinafter called Wuhan CRC). According to the above agreement, Wuhan CRC will contribute registered capital of RMB 200 million Yuan, and it is mainly engaging in manufacture and maintenance activities of railway equipment. In the first phase, this company will contribute RMB 40 million Yuan in currency, while the remaining registered capital will be contributed by three parties in the second phase. This company has made payment in full of the RMB 40 million Yuan on Feb. 5, 2013, and therefore, its shareholding proportion is 100%, for which, Wuhan Panlong Certified Public Accountants Co., Ltd. has verified the above capital contributed on Feb. 5, 2013, and issued the WPKYZ [2013] No. 027 Capital Verification Report. Wuhan CRC has completed the necessary registration formalities in Administrative Bureau for Industry and Commerce of Wuhan City Hubei Province on Feb. 5, 2013 and achieved the Corporation Business License issued there.



#### 45 Non-adjusting events after balance sheet date (continued)

Resolution concluded on the above Board Meeting has also approved the Equity Transfer Agreement signed by this company with Changchun High Tech Venture Investment Group Co., Ltd. (hereinafter called HTVIG) on March 18, 2013. According to the above agreement, CHTVIG shall transfer its 35.59% stock rights of Jilin Province High-Tech Electric Automobile Co., Ltd. (hereinafter called HTEA) to this company via listing in Property Rights Exchange Center of Changchun, Jilin Province. This company has achieved the equity by RMB 35 million Yuan in the listing trade, and then, transferred the equity to the Property Rights Exchange Center of Changchun, Jilin Province on March 20, 2013. Up to the financial reporting date, the related equity transfer formalities have not been completed yet.

#### 46 Related Parties and Their Transactions

(1) Information about parent company and ultimate holding company of this Company:

<u>Company Name</u>	<u>Registered Place</u>	<u>Nature of Business</u>	<u>Registered Capital</u> RMB Yuan	<u>Proportion of Shareholding of This Company</u>	<u>Proportion of Vote Rights of This Company</u>	<u>Relation with This Company</u>
China North Railway Vehicles Co., Ltd.	Beijing	Manufacturing industry	10,320,056,303.00	93.29%	93.29%	Parent company

The ultimate holding company of our company is China Northern Locomotive and Vehicle Industry Group Corporation.

Registered capital and its change of major related parties with which there are controlling relationships:

<u>Company Name</u>	<u>Balance at the Beginning of the Year</u> RMB Yuan	<u>Increase in This Year</u> RMB Yuan	<u>Decrease in This Year</u> RMB Yuan	<u>Balance at the End of the Year</u> RMB Yuan
China North Locomotive Vehicles Industry Group Co.	9,860,503,379.93	2,132,640,000.00	-	11,993,143,379.93
China North Railway Vehicles Co., Ltd.	8,300,000,000.00	2,020,056,303.00	-	10,320,056,303.00

Parent Company's shareholding or rights and interests and its change:

<u>Company Name</u>	<u>Amount at the Beginning of the Year</u>		<u>Increase in This Year</u>		<u>Decrease in This Year</u>		<u>Amount at the End of the Year</u>	
	Amount	%	Amount	%	Amount	%	Amount	%
China North Railway Vehicles Co., Ltd.	1,535,679,251.00	73.85%	404,310,656.00	19.44%	-	-	1,939,989,907.00	93.29%

(2) Please refer to Note 5 (1) for detail information about subsidiaries of this Company.

(3) Please refer to Note 13 for detail information about important cooperative and associated companies.

46 Related parties and their transactions (continued)

(4) Transactions between this Group and this Company and related parties except key managerial staff:

(a) Amounts of transactions with related parties:

<u>This Group</u>	<u>Current Year</u> RMB Yuan	<u>Last Year</u> RMB Yuan
Commodity sale	668,093,627.17	1,039,157,544.99
Material procurement	2,709,431,402.39	3,122,772,634.77
Interest expense	259,821,290.75	164,669,243.10
Dividend pay	252,580,146.36	65,528,561.19
Labor service providing	31,725,352.71	9,425,387.99
Labor service receiving	125,086,567.76	98,708,269.83
Fixed assets procurement	-	1,575,134.37
Borrowing from related parties	8,476,780,000.00	4,241,380,000.00
Repayment to related parties	9,532,930,000.00	2,594,200,000.00
Fixed assets under financing lease	19,204,841.98	-
Fixed assets under financing lease	3,648,115.76	3,753,175.54
Interest expense		
Fixed assets under financing lease	14,352,689.04	14,218,415.89
Rental payment		

<u>This Group</u>	<u>Current Year</u> RMB Yuan	<u>Last Year</u> RMB Yuan
Commodity sale	1,825,569,128.76	1,615,770,091.62
Material procurement	4,273,013,696.95	3,531,646,616.52
Interest expense	259,821,290.75	164,669,243.10
Dividend pay	252,580,146.36	5,528,561.19
Labor service providing	27,037,352.71	4,721,187.50
Labor service receiving	116,696,837.78	92,556,288.79
Fixed assets procurement	-	1,575,134.37
Borrowing from related parties	8,476,780,000.00	4,241,380,000.00
Repayment to related parties	9,532,930,000.00	2,594,200,000.00
Fixed assets under financing lease	19,204,841.98	-
Fixed assets under financing lease	3,648,115.76	3,753,175.54
Interest expense		
Fixed assets under financing lease	14,352,689.04	14,218,415.89
Rental payment		

46 Related parties and their transactions (continued)

(4) Transactions between this Group and this Company and related parties except key managerial staff:  
(continued)

(b) Balance of transactions with related parties on Dec. 31 is given below:

<u>This Group</u>	<u>Current Year</u>	<u>Last Year</u>
	RMB Yuan	RMB Yuan
Accounts receivable	632,893,799.35	364,766,877.30
Notes receivable	20,000,000.00	20,000,000.00
Advance payment	170,951,700.07	251,785,625.05
Other receivables	76,946.87	-
Provision for Bad Debts	624,600.15	429,933.83
Short-term borrowing	400,000,000.00	1,360,000,000.00
Notes payable	692,605,621.61	437,692,802.72
Accounts payable	1,039,805,855.66	1,112,626,132.30
Advance receipt	105,231,890.49	100,000,000.00
Interest payable	6,554,364.96	5,514,540.44
Dividends payable	1,305,929,249.91	316,386,013.58
Other payables	6,492,230.99	8,400,891.35
Payroll payable	11,534,931.82	15,712,155.82
Long-term loan	996,420,000.00	1,091,680,000.00
Non-current liabilities due within a year	144,819,542.32	141,796,409.26
Long-term account payable	42,528,139.86	38,712,816.45
Special accounts payable	75,890,000.00	75,890,000.00
Dividends receivable	-	60,000,000.00
Balance of related party's guarantee received	-	3,825,019.30



46 Related parties and their transactions (continued)

(4) Transactions between this Group and this Company and related parties except key managerial staff:  
(continued)

(b) Balance of transactions with related parties on Dec. 31 is given below:

<u>This Group</u>	<u>Current Year</u> RMB Yuan	<u>Last Year</u> RMB Yuan
Accounts receivable	1,194,661,976.85	830,303,576.51
Notes receivable	20,000,000.00	20,000,000.00
Advance payment	170,951,700.07	251,785,625.05
Provision for Bad Debts	400,000.00	429,933.83
Short-term borrowing	400,000,000.00	1,360,000,000.00
Notes payable	807,605,621.61	420,465,440.92
Accounts payable	1,364,076,932.38	1,079,826,429.46
Advance receipt	100,000,000.00	100,000,000.00
Interest payable	6,554,364.96	5,514,540.44
Dividends payable	1,305,929,249.91	316,386,013.58
Other payables	6,492,230.99	8,400,891.35
Payroll payable	996,420,000.00	1,091,680,000.00
Long-term loan	11,534,931.82	15,712,155.82
Non-current liabilities due within a year	144,819,542.32	141,796,409.26
Long-term account payable	42,528,139.86	38,712,816.45
Special accounts payable	75,890,000.00	75,890,000.00
Dividends receivable	-	60,000,000.00
Balance of related party's guarantee received	-	3,825,019.30

46 Related parties and their transactions (continued)

(4) Transactions between this Group and this Company and related parties except key managerial staff:  
(continued)

(c) (4)(a) and (b) Relation between trade-involved related parties and this group/this company

<u>Name of Company</u>	<u>Relation with This Group</u>	<u>Relation with This Company</u>
China CNR Corporation Limited	Parent company	Parent company
Chongqing CNR Sifang Institute Science & Technology Co., Ltd.	Associated company	Controlled by same parent company
Changchun CRC-Bombardier Railway Vehicles Co., Ltd.	Joint venture company	Joint venture company
Teheran Metro Co.	Other invested units	Other invested units
Shanghai Alstom Transport Equipment Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Dalian Locomotive Vehicles Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Beijing CNR Logistics Development Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Beijing CED Railway	Controlled by same parent company	Controlled by same parent company
Electric Tech Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Import & Export Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Tangshan Railway Vehicles Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Tianjin Rolling Stock and Rail Transit Equipment Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Shandong Huateng Environmental Protection Tech Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Yongji New Speed Motor Electric Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Changchun CNR Logistic Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Changchun CNR Logistic Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Changchun City Guokai Die Equipment Manufacturing and Repair Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Changchun Railway Vehicle Equipment Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Qingdao KAMAX Buffer Equipment Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Qingdao Sifang Vehicle Research Institute Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Qingdao Sirui Technology Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Shanghai Rail Traffic Equipment Development Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Dalian Locomotive Research Institute Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Xi'an Rail Traffic Equipment Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Investment and Leasing Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Datong Electric Locomotive Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Beijing CED Railway Electric Tech Co., Ltd.	Controlled by same parent company	Controlled by same parent company
CNR Dalian Electric Traction Research and Development Center	Controlled by same parent company	Controlled by same parent company
Xi'an Yongdian Electric Co., Ltd.	Controlled by same parent company	Controlled by same parent company
Qingdao Alstom Railway Equipment Co., Ltd.	Other related parties	Other related parties
Shanghai Alstom Transport Electric Co., Ltd.	Other related parties	Other related parties
Changchun Di'an International Industry Co., Ltd.	Other related parties	Other related parties
Datong ABB Traction Transformer Co., Ltd.	Other related parties	Other related parties
Qingdao Faiveley SRI Rail Brake Co., Ltd.	Other related parties	Other related parties
CNR Changchun Railway Vehicle Plant	Controlled by same ultimate holding company	Controlled by same ultimate holding company

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**  
  
**QUALIFICATIONS AND CERTIFICATIONS**

NOTE: The Authority reserves the right to audit compliance with respect to each of the required statements and certifications in the forms submitted by Offerors, including but not limited to the Domestic U.S. Content Certification, Domestic U.S. Content Worksheet, and Final Assembly of Production (Non-Pilot) Vehicles in Massachusetts.

**Questions Concerning Eligibility**

Provide short answers (and attach relevant documents) to the following questions and requests:

1. Attach relevant Certificate of Good Standing from the Secretary of State of the Commonwealth of Massachusetts.  
  
A: Please see Attachment 1 for details.
2. Provide the names and telephone numbers of all business owners, shareholders if not a publicly held corporation, and/or members if a limited liability company.  
  
A: CNR MA Corporation is a joint venture of China CNR Corporation Limited and CNR Changchun Railway Vehicles Co., Ltd.  
  
The website of CNR is [Http://en.chinacnr.com](http://en.chinacnr.com).  
The website of CNR CRC is [Http://www.crc.chinacnr.com](http://www.crc.chinacnr.com)
3. Provide the names, title and telephone numbers of all officers.  
  
A: Mr. Xiwei Lu President +86 431 87831605; Mr. Yanbin Yu +86 10 51897284  
Mr. Chuanhe Zhou Secretary +86 431 87831651
4. Has the business or an owner or shareholder of the business ever had a prior contractual relationship with the MBTA? If yes, please describe relationship.  
  
A: No.
5. Has the business or an owner or shareholder of the business ever been in default of any obligations under a contract with the MBTA, any other Massachusetts state agency or any federal agency? If yes, please describe the circumstances. Please indicate whether it resulted in a termination for cause.  
  
A: No.
6. Have any of the business owners, shareholders, or officers every been convicted of felony violations of Federal, state or local laws? If yes, please describe the circumstances.  
  
A: No.
7. Are there any pending recent law suits against the business or any of its owners or



shareholders? If yes, please describe the circumstances.

A: No.

8. Provide the name, address, account number, contact person and telephone number of the insurance agent responsible for procuring insurance required by the Solicitation Documents.

A: Information of two potential insurance agents for this project are as below:

Name: Lockton Companies  
Address: 1185 Avenue of the Americas, Suite 2010 New York, New York, 10036  
Contact person: Michael Lombardi  
Telephone No: +1 646 572 3923  
Account number: 004832042517

Name: Willis of Massachusetts, Inc.  
Address: Three Copley Place, Suite 300, Boston, MA 02116  
Contact person: Nancy Rogers  
Telephone No: +1 617-351-7405  
Account number: 1000151314514

9. Provide the name, address, contact person and telephone of three business credit references, including but not limited to your primary banking institution.

A:  
Name: Bank of China New York Branch  
Address: 410 Madison Ave, New York NY 10017  
Contact Person: Mr. Hao Guo  
Telephone: +1 646-231-3098

Name: NAI Hunneman  
303 Congress Street, Boston MA  
Mr. F. Michael DiGiano, Executive Vice President  
Phone: +1 617-457-3410

Name: Edward Wildman Palmer LLP  
Huntington Avenue Boston, MA 02199  
Mr. Gerald Hendrick, Partner  
Phone: +1 617-951-2222

10. Has the business or any of the business's owners or shareholders ever filed for bankruptcy or invoked insolvency proceedings under state law?

A: No.

11. Provide the last three (3) years of audited financial statements, or reasonable equivalent of the Offeror. If the Offeror is a joint venture or other combination of business entities, provide the last three (3) years audited financial statements for each entity.  
A: CNR MA Corporation as the Offeror is a joint venture of China CNR Corporation Limited ("CNR") and CNR Changchun Railway Vehicles Co., Ltd. ("CNR CRC")  
Please see Attachment 2 for the financial statements of CNR and CNR CRC.
12. Provide the business's current code of business ethics or equivalent.  
A: Please see Attachment 3 for CNR MA Code of Ethics.
13. Provide the responses to Questions Nos. 1 through 12 for all proposed suppliers of major subsystems identified in response to Tab I.1 – Technical Approach.  
A: Please see Attachment 4 in Part B Volume 2 of 2 for the responses from proposed suppliers.

**Required Forms for Determining Eligibility**

	<b><u>Submitted</u></b>	
	<b><u>Yes</u></b>	<b><u>No</u></b>
Non-Collusion Affidavit	<u>×</u>	<u>          </u>
Conflict of Interest Certification	<u>×</u>	<u>          </u>
Assurance of Adherence	<u>×</u>	<u>          </u>
Performance Guarantee	<u>×</u>	<u>          </u>
Insurance Requirements	<u>×</u>	<u>          </u>
Domestic U.S. Content Certification and Domestic U.S. Content Worksheet	<u>×</u>	<u>          </u>
Final Assembly of Production (Non-Pilot) Vehicles in Massachusetts	<u>×</u>	<u>          </u>
Security Requirements Certification	<u>×</u>	<u>          </u>
Right-of-Way Safety Training Requirements Certification	<u>×</u>	<u>          </u>
Certificate Regarding Debarment, Suspension and Other Responsibility Matters	<u>×</u>	<u>          </u>
Certificate Regarding Debarment, Suspension and Other Responsibility Matters for Lower Tier Participant	<u>×</u>	<u>          </u>
Intellectual Property License Agreement Certification	<u>×</u>	<u>          </u>
M/WBE Utilization Form	<u>×</u>	<u>          </u>
M/WBE Participation Schedule	<u>×</u>	<u>          </u>

	<u>Submitted</u>	
	<u>Yes</u>	<u>No</u>
M/WBE Letter of Intent	<u>×</u>	<u>          </u>
M/WBE Affidavit, with most recent certification letter or other documentation establishing M/WBE certification	<u>×</u>	<u>          </u>
Certification of Compliance with Regulation 102 CMR 12.00 Dependent Care Assistance Program Including Child Care	<u>×</u>	<u>          </u>
Prohibited Use of Undocumented Workers Certification	<u>×</u>	<u>          </u>
Certification Regarding Companies Doing Business with or in Northern Ireland	<u>×</u>	<u>          </u>
MBTA Retiree Certification	<u>×</u>	<u>          </u>
List of Manufacturer Subcontractors / Suppliers	<u>×</u>	<u>          </u>
Acknowledgment of Addenda	<u>×</u>	<u>          </u>

NOTE: Offerors shall utilize pages of Section B, Part B Technical Proposal and Statements and Certifications Regarding Eligibility and Qualifications in submitting their proposal.

Offerors are advised that this checklist is provided as a convenience only for proposal preparation and does not warrant to list all data required for submittal.

For any "NO" submission, explanation must be provided for the Authority's review and determination.



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**NON-COLLUSION AFFIDAVIT**

It shall be understood that any offer submitted to the MBTA is made without collusion with any other Offeror submitting an offer on the same commodity/service, and is in all respects fair and without fraud.

STATE OF New York

Date: May 13, 2014

COUNTY OF New York S.S.

The undersigned being duly sworn, deposes and says that he/she is the

Treasurer

(Sole Owner; Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of CNR MA Corporation  
(Name of Firm as Appearing in Submitted Proposal)

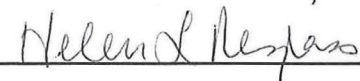
and works in Beijing, China  
(City/Town)

and certifies under penalties of perjury that this proposal is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this paragraph the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

 Treasurer

(Signature and Title of Person Making Affidavit)

Sworn to before me this 13<sup>th</sup> day of May, 20 14

Notary Public: 

My commission expires: May 20, 2014

**HELEN L. RESPASS**  
Notary Public, State of New York  
No. 02RE0074522  
Qualified in New York County  
Commission Expires May 20, 20 14

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CONFLICT OF INTEREST CERTIFICATION**

The undersigned hereby certifies that the Offeror shall comply with the Massachusetts Conflict of Interest Laws, M.G.L. c. 268A, and with the Conflict of Interest terms stated in Section C7.03.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**ASSURANCE OF ADHERENCE**

By execution below, the Offeror hereby offers to furnish equipment and services in accordance with the Contract as indicated herein:

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**PERFORMANCE GUARANTEE**

The undersigned hereby certifies that the Offeror shall provide a Performance Guarantee in the form of an Irrevocable Stand-By Letter of Credit in the amount of Thirty Percent (30%) of the Total Base Contract Price in accordance with Section C3.03B. Statement from Banking Institute to be attached herein. The form of the letter provided by the Banking Institute shall be in substantial form as set forth in Section E.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



中國銀行

BANK OF CHINA NEW YORK BRANCH

TELEX: ITT 423635, WU 661723

S.W.I.F.T.: BKCH US 33

410 MADISON AVENUE  
NEW YORK, NY 10017  
TEL: (212) 935-3101  
FAX: (212) 593-1831

## BANK LETTER OF COMMITMENT FOR LETTER OF CREDIT

Re: CNR MA Corporation,  
MBTA Project No.: CAP 27-10

To: MBTA

Dear Sirs:

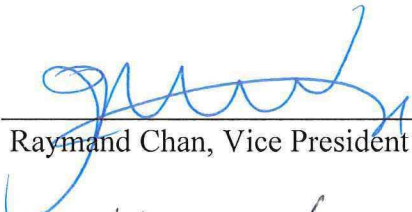
This letter serves to confirm that our bank will issue an unconditional, irrevocable, nontransferable standby letter of credit naming Massachusetts Bay Transportation Authority ("MBTA") as beneficiary, in the amount of USD210,000,000.00, within five (5) business days of receipt of written notice from MBTA or CNR MA Corporation that CNR MA Corporation has been selected as a successful proposer for the referenced Project. It is further agreed that any action arising under the letter of credit will be subject to jurisdiction and venue in the commonwealth of Massachusetts and governed by Massachusetts law. Provided that if the issuing bank has no office in Massachusetts, the letter of credit will be subject to jurisdiction and venue in the state of New York, and governed by New York law.

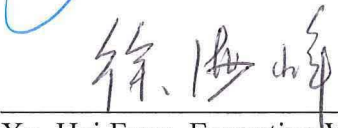
This letter shall remain in full force and effect until said letter of credit is delivered to MBTA in form and substance acceptable to MBTA or upon the withdrawal or termination of this letter upon ten (10) days' prior written notice to the Office of the General Counsel, MBTA.

Dated: April 28<sup>th</sup>, 2014

Very truly yours  
Bank of China, New York

By:

  
Raymand Chan, Vice President

  
Xu, Hai Feng, Executive Vice President

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**INSURANCE REQUIREMENTS**

The undersigned hereby certify that the Offeror shall provide full compliance with the Insurance Requirements provision in accordance with Section C3.05.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**DOMESTIC U.S. CONTENT REQUIREMENT**

The Offeror hereby certifies that it will comply with the Domestic U.S. Content Requirements set forth in Section C7.17.

NOTE: If the Offeror fails to demonstrate that it is in compliance with the Domestic U.S. Content Requirements set forth in Section C7.17, it will be required to take the necessary steps in order to achieve compliance. If the Offeror takes these necessary steps, it will not be allowed to change its original offered price or the price of its final offer. If an Offeror does not take the necessary steps, it will not be awarded the contract. Once the Contract has been awarded, the Contractor's failure to take the necessary steps will be considered a breach of the Contract.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**DOMESTIC U.S. CONTENT WORKSHEET**  
**FOR CNR ORANGE LINE CAB CAR**

At least 60% of the total cost of rolling stock components must be Domestic U.S. Content or covered by a current FTA waiver as provided in Section C7.17.

**Components**

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Car Shell	CNC CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Traction Motor	MEPPI/Everson 614 Greomar Road Nazareth, PA18064	Domestic	No	<u>16.74</u> % of Total Content
Propulsion Gear Box	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	
Propulsion Inverter Box	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA15086	Domestic	No	
Switch Box	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA15086	Domestic	No	
Filter Inductor with Blower	MEPPI/Mitsubishi Electric Corporation 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content
HSCB	Mitsubishi Electric Corporation 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Braking Resistors	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Propulsion Controls	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Low Voltage Auxiliary Power Supplies	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.36</u> % of Total Content
Air Conditioning Equipment	Ellcon National Inc. (Faiveley Transport) China	Foreign	No	<u>0</u> % of Total Content
Air Brake Compressor	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>5.39</u> % of Total Content
Brake Controls	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	
Foundation Brake Equipment	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	
Train Control System	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.23</u> % of Total Content
Window Assemblies	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Communication Equipment	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>4.56</u> % of Total Content
Lighting	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>1.01</u> % of Total Content
Seating	Freedman Seating Co. 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>0.97</u> % of Total Content
Doors	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>3.19</u> % of Total Content
Door Actuators and Controls	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	



<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Coupler and Draft Gear	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>2.93</u> % of Total Content
Truck Frame	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>6.12</u> % of Total Content
Journal Bearings	Timken TBD	Foreign	No	<u>0</u> % of Total Content
Wheel and Axle	Bonatrans Czech Republic	Foreign	No	<u>0</u> % of Total Content
Diagnostic Equipment	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	Included in Train Control System
Third Rail Pick-up Equipment	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Interior Linings	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>4.75</u> % of Total Content
Heating Equipment	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>0.56</u> % of Total Content
Battery	Saft America, Inc. Valdosta, GA	Domestic	No	<u>0.43</u> % of Total Content
Electrical Rain Wiper	AM Equipment PO Box 790 402 E. Hazel Jefferson, OR 97352	Domestic	No	<u>0.06</u> % of Total Content
Current Collector	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>0.39</u> % of Total Content
Cab Signal Equipment	ALSTOM Signaling Inc. Rochester, NY	Domestic	No	<u>9.60</u> % of Total Content
Manufacturing Labor for Wheel/Axle Set	UTCRAAS, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>0.21</u> % of Total Content

**Subcomponents**

For each Component identified as Domestic U.S. Content above, provide the information in the table below.

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Traction Motor Subcomponents	MEPPI/Everson 614 Greemar Road Nazareth, PA18064	Domestic	No	≥60 % of Cost of Total Content
Propulsion Gear Box Subcomponents	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	≥60 % of Cost of Total Content
Propulsion Inverter Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA15086	Domestic	No	≥60 % of Cost of Total Content
Switch Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA15086	Domestic	No	≥60 % of Cost of Total Content
Low Voltage Auxiliary Power Supply Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	≥60 % of Cost of Total Content
Air Brake Compressor Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Dr, Duncan, SC 29334	Domestic	No	≥60 % of Cost of Total Content
Brake Control Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	≥60 % of Cost of Total Content
Foundation Brake Equipment Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	≥60 % of Cost of Total Content
Train Control System Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	≥60 % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Communication Equipment Subcomponents	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>00</u> % of Cost of Total Content
Train Radio Control Head, Train-borne Announcement & Video System Unit	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Automatic Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Train-borne Digital Video Recorder	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
PEI Station	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Exterior Destination Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
External side Destination Indicator	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Video Monitor	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Cab Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Cab Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Forward Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
LED Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content



<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Exterior Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Lighting Subcomponents	Lin Industries Inc. 6314 Ice House Road Hornell, New York 14843	Domestic	No	<u>65</u> % of Cost of Total Content
Seating Subcomponents	Freedman Seating Company 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>80</u> % of Cost of Total Content
Door Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Door Actuator and Control Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>74</u> % of Cost of Total Content
Coupler and Draft Gear Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
Truck Frame and Bolster	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>100</u> % of Cost of Total Content
Diagnostic Equipment Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Interior Lining Subcomponents	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Heating Equipment Subcomponents	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Battery Subcomponents	Saft America, Inc Valdosta, GA	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Electrical Rain Wiper Subcomponents	AM Equipment PO Box 790 402 E. Hazel Jefferson, OR 97352	Domestic	No	<u>78</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Current Collector Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
ATP/ASR Modules	ALSTOM Signaling Inc. Rochester, NY	Domestic	Yes- Waiver for microcomputers	<u>85</u> % of Cost of Total Content
ATP/ASR Modules	Boss Precision Rochester, NY	Domestic	No	<u>2</u> % of Cost of Total Content
Receiver Coils	Dyco Electronics Hornell, NY	Domestic	No	<u>1</u> % of Cost of Total Content
Aspect Display Unit	ALSTOM Signaling Inc. Rochester, NY	Domestic	Yes- Waiver for microcomputers	<u>5</u> % of Cost of Total Content
Manufacturing Labor for Wheel/Axle Set Subcomponents	UTCRAAS, Inc 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>100</u> % of Cost of Total Content

(Attach additional sheets as necessary.)

**TOTAL 63.50 % Domestic Content of Total Cost of Rolling Stock Components**

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
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**DOMESTIC U.S. CONTENT WORKSHEET**  
**FOR CNR ORANGE LINE NON-CAB CAR**

At least 60% of the total cost of rolling stock components must be Domestic U.S. Content or covered by a current FTA waiver as provided in Section C7.17.

**Components**

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Car Shell	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Traction Motors	MEPPI/Everson 614 Gremer Road Nazareth, PA 18064	Domestic	No	<u>19.84</u> % of Total Content
Propulsion Gear Box	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	
Propulsion Inverter Box	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Switch Box	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Filter Inductor with Blower	Mitsubishi Electric Corp. 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content



<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
HSCB	Mitsubishi Electric Corp. 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content
Braking Resistors	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Propulsion Controls	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Low Voltage Auxiliary Power Supplies	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.98</u> % of Total Content
Air Conditioning Equipment	Ellcon National Inc. (Faiveley Transport) China	Foreign	No	<u>0</u> % of Total Content
Current Collector	Wabtec Passenger Transit 30 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>0.46</u> % of Total Content
Brake Controls	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>4.74</u> % of Total Content
Foundation Brake Equipment	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	
Train Control System	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.83</u> % of Total Content
Window Assemblies	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Communication Equipment	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>5.40</u> % of Total Content
Lighting	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>1.19</u> % of Total Content
Seating	Freedman Seating Co. 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>1.15</u> % of Total Content

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Doors	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>3.77</u> % of Total Content
Door Actuators and Controls	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	
Coupler and Draft Gear	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>3.48</u> % of Total Content
Truck Frame	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>7.25</u> % of Total Content
Journal Bearings	Timken To be determined	Foreign	No	<u>0</u> % of Total Content
Wheel and Axle	Bonatrans Czech Republic	Foreign	No	<u>0</u> % of Total Content
Diagnostic Equipment	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	Included in Train Control System
Third Rail Pick-up Equipment	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Interior Linings	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>5.59</u> % of Total Content
Heating Equipment	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>0.66</u> % of Total Content
Battery	Saft America, Inc. Valdosta, GA	Domestic	No	<u>0.51</u> % of Total Content
Manufacturing Labor for Wheel/Axle Set	UTCRA, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>0.25</u> % of Total Content

**Subcomponents**

For each Component identified as Domestic U.S. Content above, provide the information in the table below.

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Traction Motor Subcomponents	MEPPI/Everson 614 Greinar Road Nazareth, PA18064	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Gear Box Subcomponents	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Inverter Box Subcomponents	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Switch Box Subcomponents	MEPPI/Mitsubishi Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Low Voltage Auxiliary Power Supply Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Current Collector Subcomponent	Wabtec Passenger Transit 30 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
Brake Controls Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Foundation Brake Equipment Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content t



<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Train Control System Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	≥60 % of Cost of Total Content
Communication Equipment Subcomponents	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Train Radio Control Head, Train-borne Announcement & Video System Unit	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Automatic Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Train-borne Digital Video Recorder	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
PEI Station	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
External Side Destination Indicator	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Video Monitor	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Saloon Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Cab Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Saloon Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content
Forward Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	100 % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
LED Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Exterior Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Lighting Subcomponents	Lin Industries Inc. 6314 Ice House Road Hornell, New York 14843	Domestic	No	<u>65</u> % of Cost of Total Content
Seating Subcomponents	Freedman Seating Company 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>80</u> % of Cost of Total Content
Door Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Door Actuator and Control Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>74</u> % of Cost of Total Content
Coupler and Draft Gear Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
Truck Frame and Bolster	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>100</u> % of Cost of Total Content
Diagnostic Equipment Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Interior Lining Subcomponents	Ultimate Transportation N. America, LLC 30914 San Antonio St. Hayward, CA 94544	Domestic	No	<u>&gt;60</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Heating Equipment Subcomponents	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Battery Subcomponents	Saft America, Inc. Valdosta GA	Domestic	No	<u>≥60</u> % of Cost of Total Content
Manufacturing Labor to Mount Wheel/Axle Set Subcomponents	UTCRA, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>100</u> % of Cost of Total Content

(Attach additional sheets as necessary.)

**TOTAL 62.10 % Domestic Content of Total Cost of Rolling Stock Components**



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
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**DOMESTIC U.S. CONTENT WORKSHEET**  
**FOR CNR RED LINE CAB CAR**

At least 60% of the total cost of rolling stock components must be Domestic U.S. Content or covered by a current FTA waiver as provided in Section C7.17.

**Components**

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Car Shell	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Traction Motors	MEPPI/Everson 614 Gremer Road Nazareth, PA 18064	Domestic	No	<u>16.31</u> % of Total Content
Propulsion Gear Box	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	
Propulsion Inverter Box	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Switch Box	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Filter Inductor with Blower	Mitsubishi Electric Corp. 8-1-1, Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content
HSCB	Mitsubishi Electric Corp. 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>0</u> % of Total Content

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Braking Resistors	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Propulsion Controls	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Low Voltage Auxiliary Power Supplies	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.27</u> % of Total Content
Air Conditioning Equipment	Ellcon National Inc. (Faiveley Transport) China	Foreign	No	<u>0</u> % of Total Content
Air Brake Compressor	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>5.25</u> % of Total Content
Brake Controls	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	
Foundation Brake Equipment	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	
Train Control System	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.15</u> % of Total Content
Window Assemblies	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Communication Equipment	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>4.44</u> % of Total Content
Lighting	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>0.98</u> % of Total Content
Seating	Freedman Seating Co. 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>0.90</u> % of Total Content
Doors	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>4.05</u> % of Total Content

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Door Actuators and Controls	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	
Coupler and Draft Gear	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>2.86</u> % of Total Content
Truck Frame	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>5.96</u> % of Total Content
Journal Bearings	Timken TBD	Foreign	No	<u>0</u> % of Total Content
Wheel and Axle	Bonatrans Czech Republic	Foreign	No	<u>0</u> % of Total Content
Diagnostic Equipment	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	Included in Train Control System
Third Rail Pick-up Equipment	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Interior Linings	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>5.11</u> % of Total Content
Heating Equipment	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>0.69</u> % of Total Content
Battery	Saft America, Inc. Valdosta, GA	Domestic	No	<u>0.42</u> % of Total Content
Electrical Rain Wiper	AM Equipment PO Box 790 402 E. Hazel Jefferson, OR 97352	Domestic	No	<u>0.06</u> % of Total Content
Current Collector	Wabtec Passenger Transit 30 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>0.38</u> % of Total Content
Cab Signal Equipment	ALSTOM Signaling, Inc. Rochester, NY	Domestic	No	<u>9.35</u> % of Total Content



<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Manufacturing Labor for Wheel/Axle Set	UTCRAAS, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>0.21</u> % of Total Content

#### **Subcomponents**

For each Component identified as Domestic U.S. Content above, provide the information in the table below.

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Traction Motor Subcomponents	MEPPI/Everson 614 Greemar Road Nazareth, PA 18064	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Gear Box Subcomponents	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Inverter Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Switch Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Low Voltage Auxiliary Power Supply Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Air Brake Compressor Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Brake Control Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Foundation Brake Equipment Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content t
Train Control System Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Communication Equipment	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Train Radio Control Head, Train-borne Announcement & Video System Unit	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Automatic Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Train-borne Digital Video Recorder	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
PEI Station	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Exterior Destination Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
External side Destination Indicator	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Video Monitor	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Cab Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Forward Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
LED Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Exterior Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Lighting Subcomponents	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>65</u> % of Cost of Total Content
Seating Subcomponents	Freedman Seating Company 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>80</u> % of Cost of Total Content
Door Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>≥60</u> % of Cost of Total Content
Door Actuator and Control Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>74</u> % of Cost of Total Content
Coupler and Draft Gear Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content



<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Truck Frame and Bolster	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>100</u> % of Cost of Total Content
Diagnostic Equipment Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Interior Lining Subcomponents	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Heating Equipment Subcomponents	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Battery Subcomponents	Saft America, Inc. Valdosta GA	Domestic	No	<u>&gt;60</u> % <u>0</u>
Electrical Rain Wiper Subcomponents	AM Equipment PO Box 790 402 E. Hazel Jefferson, OR 97352	Domestic	No	<u>78</u> % of Cost of Total Content
Current Collector Subcomponents	Wabtec Passenger Transit 30 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
ATP/ASR Modules	ALSTOM Signaling, Inc. Rochester, NY	Domestic	Yes- Waiver for microcomputers	<u>85</u> % of Cost of Total Content
ATP/ASR Modules	Boss Precision Rochester, NY	Domestic	No	<u>2</u> % of Cost of Total Content
Receiver Coils	Dyco Electronics Hornell, NY	Domestic	No	<u>1</u> % of Cost of Total Content
Aspect Display Unit	ALSTOM Signaling, Inc. Rochester, NY	Domestic	Yes- Waiver for microcomputers	<u>5</u> % of Cost of Total Content
Manufacturing Labor for Wheel/Axle Set Subcomponents	UTCRAAS, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>100</u> % of Cost of Total Content

(Attach additional sheets as necessary.)

**TOTAL 63.39 % Domestic Content of Total Cost of Rolling Stock Components**

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**DOMESTIC U.S. CONTENT WORKSHEET**  
**FOR CNR RED LINE NON-CAB CAR**

At least 60% of the total cost of rolling stock components must be Domestic U.S. Content or covered by a current FTA waiver as provided in Section C7.17.

**Components**

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Car Shell	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>  0  </u> % of Total Content
Traction Motors	MEPPI/Everson 614 Gremar Road Nazareth, PA 18064	Domestic	No	<u>19.37</u> % of Total Content
Propulsion Gear Box	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	
Propulsion Inverter Box	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Switch Box	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	
Filter Inductor with Blower	Mitsubishi Electric Corp. 8-1-1, Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>  0  </u> % of Total Content
HSCB	Mitsubishi Electric Corp. 8-1-1 Tsukaguchi-Honmachi, Amagasaki City, Hyogo 661-8661, Japan	Foreign	No	<u>  0  </u> % of Total Content



<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Braking Resistors	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Propulsion Controls	MEPPI/To be determined	Foreign	No	<u>0</u> % of Total Content
Low Voltage Auxiliary Power Suppliers	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.89</u> % of Total Content
Air Conditioning Equipment	Ellicon National Inc. (Faiveley Transport) China	Foreign	No	<u>0</u> % of Total Content
Current Collector	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>0.40</u> % of Total Content
Brake Controls	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>4.62</u> % of Total Content
Foundation Brake Equipment	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>4.62</u> % of Total Content
Train Control System	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>3.74</u> % of Total Content
Window Assemblies	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Communication Equipment	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>5.27</u> % of Total Content
Lighting	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>1.16</u> % of Total Content
Seating	Freedman Seating Co. 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>1.13</u> % of Total Content
Doors	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>4.80</u> % of Total Content

<b>Component (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Domestic Content</b>
Door Actuators and Controls	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	
Coupler and Draft Gear	Wabtec Passenger Transit 130 Ridgeview Center Dr Duncan, SC 29334	Domestic	No	<u>3.39</u> % of Total Content
Truck Frame	Bradken, Inc. Bradken - Atchison, KS/St. Joseph, MO	Domestic	No	<u>7.08</u> % of Total Content
Journal Bearings	Timken TBD	Foreign	No	<u>0</u> % of Total Content
Wheel and Axle	Bonatrans Czech Republic	Foreign	No	<u>0</u> % of Total Content
Diagnostic Equipment	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	Included in Train Control System
Third Rail Pick-up Equipment	CNR CRC 435 Qinyin Road Changchun City, Jilin Province, China	Foreign	No	<u>0</u> % of Total Content
Interior Linings	Ultimate Transportation N. America, LLC 30914 San Antonia St. Hayward, CA 94544	Domestic	No	<u>6.07</u> % of Total Content
Heating Equipment	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>0.81</u> % of Total Content
Battery	Saft America, Inc. Valdosta, GA	Domestic	No	<u>0.50</u> % of Total Content
Manufacturing Labor for Wheel/Axle Set	UTCRA, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>0.25</u> % of Total Content

**Subcomponents**

For each Component identified as Domestic U.S. Content above, provide the information in the table below.

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Traction Motor Subcomponents	MEPPI/Everson 614 Greemar Road Nazareth, PA18064	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Gear Box Subcomponents	MEPPI/Voith, IG Watteuw International NV, or David Brown Gear System	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Propulsion Inverter Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Switch Box Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Low Voltage Auxiliary Power Supply Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Current Collector Subcomponent	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
Brake Controls Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Foundation Brake Equipment Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>&gt;60</u> % of Cost of Total Content



<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Train Control System Subcomponent	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Communication Equipment Subcomponents	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Train Radio Control Head, Train-borne Announcement & Video System Unit	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Automatic Communications Control Panel	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Train-borne Digital Video Recorder	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
PEI Station	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
External side Destination Indicator	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Video Monitor	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Cab Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Saloon Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Forward Camera	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
LED Display	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Exterior Speaker	RL Controls LLC 10-V Gill Street Woburn, MA 01801	Domestic	No	<u>100</u> % of Cost of Total Content
Lighting Subcomponents	Lin Industries Inc. 6314 Ice House Road Hornell, NY 14843	Domestic	No	<u>65</u> % of Cost of Total Content
Seating Subcomponents	Freedman Seating Company 4545 W. Augusta Blvd, Chicago, IL 60651	Domestic	No	<u>80</u> % of Cost of Total Content
Door Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Door Actuator and Control Subcomponents	Vapor Stone Rail Systems 72 Arizona Ave., Plattsburgh, NY 12903	Domestic	No	<u>74</u> % of Cost of Total Content
Coupler and Draft Gear Subcomponents	Wabtec Passenger Transit 130 Ridgeview Center Drive Duncan, SC 29334	Domestic	No	<u>65</u> % of Cost of Total Content
Truck Frame and Bolster	Bradken, Inc. Bradken - Atchison, KS/St. Joe, MO	Domestic	No	<u>100</u> % of Cost of Total Content
Diagnostic Equipment Subcomponents	MEPPI/Mitsubishi Electric Power Products 530 Keystone Dr, Warrendale, PA 15086	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Interior Lining Subcomponents	Ultimate Transportation N. America, LLC 30914 San Antonio St. Hayward, CA 94544	Domestic	No	<u>&gt;60</u> % of Cost of Total Content
Heating Equipment Subcomponents	RTR Technologies, Inc. 48 Main Street PO Box 67 Stockbridge, MA	Domestic	No	<u>&gt;60</u> % of Cost of Total Content

<b>Subcomponent (Name / Description)</b>	<b>Manufacturer (Name / Description)</b>	<b>Domestic / Foreign</b>	<b>Covered by Current FTA Waiver?</b>	<b>% of Cost of Total Content</b>
Battery Subcomponents	Saft America, Inc. Valdosta, GA	Domestic	No	<u>≥60</u> % of Cost of Total Content
Manufacturing Labor for Wheel/Axle Set Subcomponents	UTCRA, Inc. 501 Highland Avenue Morton, PA 19070	Domestic	No	<u>100</u> % of Cost of Total Content

(Attach additional sheets as necessary.)

**TOTAL** 62.48 % Domestic Content of Total Cost of Rolling Stock Components



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**FINAL ASSEMBLY OF PRODUCTION (NON-PILOT) VEHICLES IN MASSACHUSETTS**

The undersigned hereby certifies that it will comply with the requirement of Section C7.18 with regard to Final Assembly of Production (Non-Pilot) Vehicles in Massachusetts.

If the undersigned's anticipated final assembly operations, processes and measures it will use in connection with the Production Vehicles delivered under the Contract differ from or do not include at a minimum all operations, processes and measures listed in the definition of Final Assembly in Section C7.18, the undersigned certifies that it has included in its proposal an explanation as to why the undersigned believes that its final assembly satisfies the general requirement of final assembly of all Production Vehicles in Massachusetts, and seeks a determination from the Authority that its proposal satisfies the general requirement in Section C7.18 that final assembly of all production vehicles take place in Massachusetts. The undersigned understands that its proposal may be rejected by the Authority as non-compliant.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**SECURITY REQUIREMENTS CERTIFICATION**

The undersigned hereby certifies that the Offeror, if awarded this Contract, shall comply with the MBTA's Security Requirements as stated in Section C7.11 of the Agreement.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**RIGHT-OF-WAY SAFETY TRAINING REQUIREMENTS CERTIFICATION**

The undersigned hereby certifies that the Offeror, if awarded this Contract, shall be in full compliance with the MBTA Right-of-Way Safety Awareness Training Requirements as stated in the Agreement.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION**  
**AND OTHER RESPONSIBILITY MATTERS**

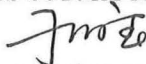
The Offeror certifies to the best of its knowledge and belief, that it, and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal, State or local department or agency.
2. Have not within a three-year period preceding this offer been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this offer had one or more public transactions (Federal, State or local) terminated for cause of default.

If the Offeror is unable to certify to any of the statements in this certification with respect to it or its principals, the Offeror shall attach an explanation to this certification).

**THE OFFEROR CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

Offeror:



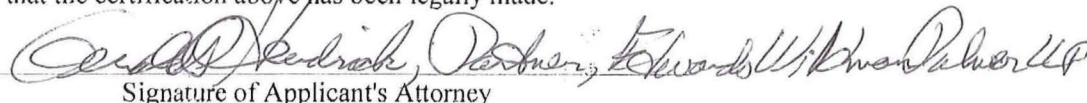
Treasurer

Signature and Title of Authorized Official

The undersigned chief legal counsel for the CNR MA Corporation hereby certifies  
(Offeror)

that the Mr. Yanbin Yu has authority under State and local law to comply with  
(Authorized Official)

the subject assurances and that the certification above has been legally made.



Signature of Applicant's Attorney

May 15, 2014

Date

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION**  
**AND OTHER RESPONSIBILITY MATTERS**

**CONTINUED**

**"INSTRUCTIONS FOR CERTIFICATION"**

Primary Covered Transactions

1. By signing and submitting this Proposal the Offeror is providing the certification on the preceding page.
2. The inability of a person to provide the certification will not necessarily result in denial of participation in this covered transaction. The Offeror shall submit an explanation of why it cannot provide the certification. The certification or explanation will be considered in connection with the Authority's determination whether to enter into this transaction. However, failure of the Offeror to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
3. The certification is a material representation of fact upon which reliance was placed when the Authority determined to enter into this transaction. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Authority, the Authority may terminate this transaction for cause of default.
4. The Offeror shall provide immediate written notice to the Authority if at any time the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The Offeror agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Authority.
6. The Offeror further agrees by submitting this proposal that it will include the clause titled "Certification regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction", without modification, in all lower tier covered transactions and in all solicitations for lowered tier covered transactions.
7. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Authority, the Authority may terminate this transaction for cause or default.

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Offeror, as the Primary Participant, hereby certifies that the attached Lower Tier Participant Certification Regarding Debarment, Suspension and Other Responsibility Matters, as noted on the two following pages, shall be duly executed, and shall remain on file with the Offeror in accordance with the Contract Provisions as if stated herein.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**


**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Freedman Seating Company

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Steve Orzech Jr

TITLE: Business Development Manager

DATE: January 13, 2014

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

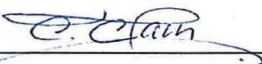
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.

LOWER TIER PARTICIPANT: LECI INC.

AUTHORIZED SIGNATURE: 

NAME (PRINTED): CHUNG CHUNG TAM

TITLE: President & COO

DATE: April 15, 2014

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

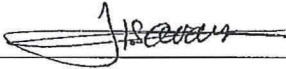
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: ELLCON NATIONAL Inc. (Fawcley Transport)

AUTHORIZED SIGNATURE: 

NAME (PRINTED): HERVE SAVARY

TITLE: Key Account Manager

DATE: 01 / 22 / 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

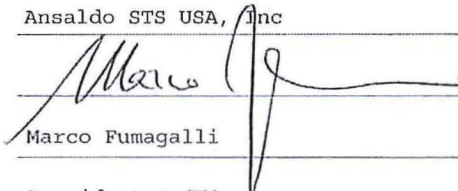
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Ansaldo STS USA, Inc

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Marco Fumagalli

TITLE: President & CEO

DATE: 3/10/2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**


**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: TDG TRANSIT DESIGN GROUP

AUTHORIZED SIGNATURE: 

NAME (PRINTED): ROBERT GAGNE

TITLE: PRESIDENT

DATE: DECEMBER 6, 2013

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY  
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.

LOWER TIER PARTICIPANT: Alstom Signaling Inc.

AUTHORIZED SIGNATURE: M Luo Xinhong

NAME (PRINTED): Xinhong Luo

TITLE: President & CEO

DATE: 03/10/2014



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.

LOWER TIER PARTICIPANT: Alstom Transportation Inc.

AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME (PRINTED): Derek Hurst

TITLE: Customer Director & VP

DATE: 3-10-2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT:

AUTHORIZED SIGNATURE:

NAME (PRINTED):

TITLE:

DATE:

LTCRAS  
Frank R. Ursone  
Frank R. Ursone  
PRESIDENT, RAIL SYSTEMS GROUP  
12/26/13

**SECTION B**

**PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

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When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Kustom Seating Unlimited

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Rick Komm

TITLE: Director of Sales and Marketing

DATE: 3/21/13



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**  
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT:

RL Controls, LLC

AUTHORIZED SIGNATURE:

Gena R. Walsh

NAME (PRINTED):

Gena Walsh

TITLE:

Principal/owner

DATE:

4/21/14

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

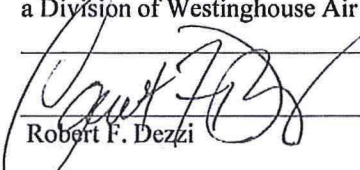
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Wabte Passenger Transit  
a Division of Westinghouse Air Brake Technologies

AUTHORIZED SIGNATURE:   
NAME (PRINTED): Robert F. Dezzi  
TITLE: Vice President  
DATE: 30 January 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Vapor Stone Rail Systems,  
a division of Westinghouse Air Brake Technologies Corporation, d/b/a Wabtec Corp.

AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME (PRINTED): Frederik van der Veen

TITLE: Proposals Manager

DATE: January 31, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME (PRINTED): \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

\_\_\_\_\_  
Timothy J. Logan  
General Manager  
Transportation Systems Division  
Mitsubishi Electric Power Products, Inc.

## SECTION B

**PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY****CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: TOA Communication Systems, Inc.

AUTHORIZED SIGNATURE:



NAME (PRINTED): Takeshi Morita

TITLE: President

DATE: 1/27/2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

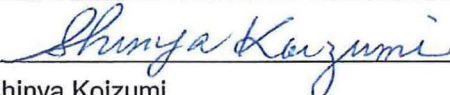
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: TOYO DENKI USA, Inc.

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Shinya Koizumi

TITLE: President

DATE: March 14, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

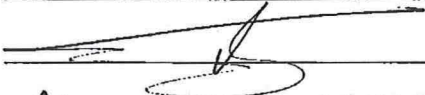
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: BAULTAR CONCEPT INC

AUTHORIZED SIGNATURE: 

NAME (PRINTED): ALEXANDRE TARANTO

TITLE: SECRETARY

DATE: 2014-01-09



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.

LOWER TIER PARTICIPANT: Soft America Inc

AUTHORIZED SIGNATURE: Debbie Updyke

NAME (PRINTED): Debbie Updyke

TITLE: Assistant Program Manager

DATE: March 11, 2014

SECTION B

PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY  
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND

OTHER RESPONSIBILITY MATTERS FOR LOWER TIER TIER PAER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Simutech International Co., LTD

AUTHORIZED SIGNATURE: 崔鹏 Cui Peng

NAME(PRINTED): Cui Peng

TITLE: Vice President

DATE: 2014/5/12

## SECTION B

**PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY****CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: FAAC Incorporated

AUTHORIZED SIGNATURE:

NAME (PRINTED):

TITLE:

DATE:

Kurt A. Flosky

Executive Vice President

May 12, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

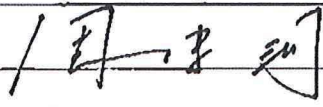
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: CNR Changchun Railway Vehicles Co., Ltd.

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Chuanhe Zhou

TITLE: Vice President

DATE: May 10, 2014



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY


CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND  
OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT

The Lower Tier Participant certifies by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

When the Lower Tier Participant is unable to certify to any of the statements in this certification, such Participant shall attach an explanation to this proposal.

**THE LOWER TIER PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION.**

LOWER TIER PARTICIPANT: Bradken Inc

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Nathan Heisler

TITLE: Vice President Sales & Marketing

DATE: 05/08/14

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND**  
**OTHER RESPONSIBILITY MATTERS FOR LOWER TIER PARTICIPANT**

**CONTINUED**

**"INSTRUCTIONS FOR CERTIFICATION"**

Lower Tier Covered Transactions

1. By signing and submitting this proposal the prospective lower tier participant is providing the certification on the preceding page.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Authority, the Authority may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
4. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Authority.
5. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions", without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
6. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may check the Nonprocurement List.
7. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
8. Except for transactions authorized under paragraph (4) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is

suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Authority, the Authority may pursue available remedies, including suspension and/or debarment.

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**INTELLECTUAL PROPERTY LICENSE AGREEMENT CERTIFICATION**

The undersigned hereby certifies that the Contractor and its related subsuppliers/subcontractors/agents will execute and adhere to a software escrow agreement and comply with the provisions of Section C5.11 as noted and defined therein and shall comply with the Contract Specification No. VE-10-036 and all other general terms and conditions.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



SECTION B  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE UTILIZATION FORM**

In connection with the performance of this Contract, the Offeror will cooperate with the MBTA in meeting its commitments and requirements with regard ensuring opportunities for creating a level playing field on which M/WBEs can compete fairly for opportunities. The Offeror shall complete and submit this M/WBE Utilization Form with its proposal and as part of the Contract.

What percentage of the Base Award Price will be performed or supplied by certified M/WBEs? **TOTAL BASE AWARD M/WBE UTILIZATION:** 16 %

What percentage of the Total Proposal Price will be performed or supplied by certified M/WBEs? **TOTAL PROPOSAL PRICE M/WBE UTILIZATION:** 15 %

**NOTE:** For each M/WBE supplying or performing a percentage of the Contract amount, you must complete the attached M/WBE Participation Schedule.

To the extent that the Offeror has not been able to secure M/WBE participation, the Offeror shall attach documentation demonstrating its good faith efforts to secure M/WBE participation.

I hereby certify that the above information is true and accurate to the best of my knowledge:

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**M/WBE UTILIZATION FORM SUPPLEMENTARY DOCUMENT**

As stated on our M/WBE Utilization form, CNR MA Corporation ("CNR MA") is committed to contract 16% of the Total Base Award Price and 15% of the Total Proposal Price to be performed or supplied by certified M/WBE firms for this project. We will continue our collaboration with the MBTA Outreach, Supplier Diversity & Development Office, and the Massachusetts Supplier Diversity Office (SDO).

Our Participation Plan, which is attached, attests to the actions successfully taken, which have already allowed us to secure 7.79% of the Base Award Price and 8.88% of Total Proposal Price for M/WBE's as attested to by the attached Letters of Intent. Additional suppliers have been contacted, and we are currently under discussion and clarification on the detailed Scope of Work with these firms. Until finalization of design and workscope, it would be premature to engage in signed Letters of Intent. We indicate in our proposal the efforts that shall continue to ensure this commitment. We have calculated and projects the following percentages of M/WBE content for the base order and total proposal to demonstrate the areas where we are certain that these commitments can be fulfilled.

<b>Content</b>	<b>Base Award</b>	<b>Total Proposal</b>
Secured Content		
Vehicle Components		
Secured through agreements and through expectations from primary vendor submittals.		
Trucking		
Technical Consulting		
Total Secured Content	7.79%	8.88%
Unsecured but Anticipated Contracts		
General Construction & Facility Setup		
Human Resources		
Visa Applications		
Vehicle Components		
Metal Fabrication		
	8.21%	6.12%
<b>Total secured and Unsecured Content</b>	<b>16%</b>	<b>15%</b>

We will continue to work with potential suppliers that will allow us to meet our M/WBE goal. **Additional outreach programs, working with sub-suppliers, and the efforts of our M/WBE consultants allow us to believe these goals to be both credible and attainable.** Our analysis of our facility setup and investment in our manufacturing operation will allow us to reach this M/WBE goal.

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE PARTICIPATION SCHEDULE**

The Offeror shall complete the following information for any M/WBE for which a percentage is given in the M/WBE Utilization Form. The Offeror shall furnish the name and telephone number of the appropriate contact person should the Authority have any questions in relation to the information furnished herein.

Name of Supplier or Subcontractor and Category (Indicate MBE or WBE)	Address and Contact Information	Description and Type of Service to be Performed or Material to be Supplied	Beginning Duration	Percent of M/WBE Participation
Raul V. BRAVO ASSOCIATES, INC MBE	1889 Preston White Drive, Suite 202 Reston VA, 20191 Claudio R. Bravo Tel: 703-326-9092	Technical Support	RFP/ Contract Execution	Base Contract: 0.50% Total Proposal: 0.39%
Lydriv Communications WBE	11 Hallet Street, Dorchester, Ma, 02122 Lydia M. Rivera, Principal Tel: 617-851-1095	MWBE Outreach Consultant	RFP/NTP	Base Contract: 0.01% Total Proposal: 0.01%
RL Controls WBE	10-V Gill St. Woburn MA 01801 Lena Walsh Principal Tel: 781-932-3349	Passenger Information System	Contract Execution	Base Contract: 2.34% Total Proposal: 2.97%
RL Controls WBE	10-V Gill St. Woburn MA 01801 Lena Walsh Principal Tel: 781-932-3349	Electrical Cabinet Assembly	Contract Execution	Base Contract: 0.39% Total Proposal: 0.39%
RL Controls WBE	10-V Gill St. Woburn MA 01801 Lena Walsh Principal Tel: 781-932-3349	Wire harness	Contract Execution	Base Contract: 0.94% Total Proposal: 0.94%



Name of Supplier or Subcontractor and Category (Indicate MBE or WBE)	Address and Contact Information	Description and Type of Service to be Performed or Material to be Supplied	Beginning / Duration	Percent of M/WBE Participation
MRI WBE	228 East 45th Street, Suite 1801 New York, NY 10017 Ms. Gayle Bernstein Tel: 212-867-9600	Inland and Sea transportation	Contract Execution	Base Contract: 2.11% Total Proposal: 2.18%
UTCRA, Inc. WBE	501 Highland Avenue, Morton, PA 19070 Ms. Betty A. Scott Tel: 610-983-0102	Wheels and Axle assembly	Contract Execution	Base Contract: 1.5% Total Proposal: 2%
Unsecured but Anticipated Contractors		General Construction Facility Setup Human Resources Visa Applications Vehicle Components Metal Fabrication	Contract Execution	Base Contract: 8.21% Total Proposal: 6.12%

OFFEROR: CNR MA CorporationAUTHORIZED SIGNATURE: NAME (PRINTED): Mr. Yanbin YuTITLE: TreasurerDATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: Raul V Bravo + Associates, Inc.

Address: 1889 Preston White Drive, Suite 202

City: Reston State: VA Zip: 20191

Telephone: \_\_\_\_\_

**Description of work to be performed by M/WBE firm:**

Engineering Consulting, Design Assistance, Purchasing, DWBE and Buy America Consulting  
Services, Manuals and Training, Industrial Design

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  Raul V. Bravo, Vice President  
(Signature and Title of Authorized Official)

Date: April 24, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: LydRiv Communications (LRC)

Address: 11 Hallet Street

City: Boston State: MA Zip: 02122

Telephone: 617-851-1095

**Description of work to be performed by M/WBE firm:**

LRC will work collaboratively with CNR MA, the MBTA office of Outreach and Supplier Diversity, and the Massachusetts

Diversity Office to enhance M/WBE participation for the Orange/Red Line Car Procurement. LRC will provide Public Relations

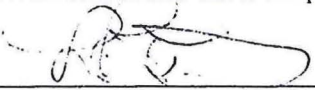
and Community Outreach services including meeting coordination and participation, and media and social media outreach coordination.

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  Lydia M. Rivera, Principal  
(Signature and Title of Authorized Official)

Date: April 29, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE LETTER OF INTENT  
(TO BE COMPLETED BY M/WBE FIRM)

Name of Offeror Firm: CNR MA CorporationAddress: 111 Huntington AvenueCity: Boston State: Ma Zip: 02199Name of M/WBE Firm: RL Controls, LLCAddress: 10-V Gill StCity: Woburn State: MA Zip: 01801Telephone: 781-932-3349

Description of work to be performed by M/WBE firm:

Electrical Cabinet Assembly

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above

By: John R. Webb Principal/owner  
(Signature and Title of Authorized Official)Date: 5/1/14

If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: RL Controls, LLC

Address: 10-V Gill Street

City: Woburn State: MA Zip: 01801

Telephone: 781-932-3349

**Description of work to be performed by M/WBE firm:**

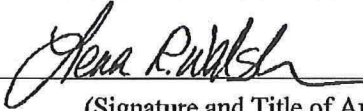
As per RLC-ISC-1333 TP R02-MBTA Red-OR-CNR-140418

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  Principal/Owner  
(Signature and Title of Authorized Official)

Date: 4/21/14

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE LETTER OF INTENT  
(TO BE COMPLETED BY M/WBE FIRM)

Name of Offeror Firm: CNR MA Corporation  
Address: 111 Huntington Avenue  
City: Boston State: MA Zip: 02199

Name of M/WBE Firm: RL Controls, LLC  
Address: 10 - V GILL ST  
City: WILMINGTON State: MA Zip: 01801  
Telephone: 781-932-3349

Description of work to be performed by M/WBE firm:

Flareless assembly - haul, spool,  
install + fasten into vehicle

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

B: John R. Walsh Principal/Owner  
(Signature and Title of Authorized Official)

Date: 5/1/14

If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

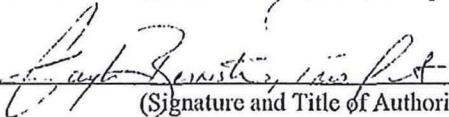
Name of Offeror Firm: CNR MA CorporationAddress: 111 Huntington AvenueCity: Boston State: MA Zip: 02199Name of M/WBE Firm: MRI USA, IncAddress: 228 East 45<sup>th</sup> St APT 4B Suite 1801City: NEW YORK State: NY Zip: 10017Telephone: 212-867-9600**Description of work to be performed by M/WBE firm:**TRANSPORTATION OF CAR SHELLS AND COMPLETE CARS

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  GALE BERNSTEIN, PRESIDENT  
(Signature and Title of Authorized Official)Date: APRIL 25, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE LETTER OF INTENT  
(TO BE COMPLETED BY M/WBE FIRM)

Name of Offeror Firm: CNR MA CORPORATION  
Address: 111 HUNTINGTON AVE  
City: State: Zip: BOSTON, MA 02119

Name of M/WBE Firm: UTEPAS INC  
Address: 501 HIGHLAND AVE  
City: State: Zip: MORTON, PA 19070  
Telephone: 610-328-1100

**Description of work to be performed by M/WBE firm:**

MANUFACTURING OF WHEELS AND AXEL ASSEMBLY

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By: Steve Asati CEO/PRESIDENT  
(Signature and Title of Authorized Official)

Date: 10-12-2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF New YorkDate: April 24, 2014COUNTY OF New York S.S.

The undersigned being duly sworn, deposes and says that he/she is the

Vice President

(Sole Owner; Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of Raul V. Bravo + Associates, Inc.

(name of M/WBE)

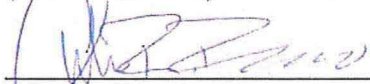
and certifies that since the date of its certification by

Supplier Diversity Office/Massachusetts Unified Certification Program

(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority status of Raul V. Bravo + Associates, Inc.

(Name of M/WBE)



(Signature and Title of Person Making Affidavit)

Sworn to before me this 24 day of April, 2014Notary Public: Helen L. RespessMy commission expires: May 20, 2014

**HELEN L. RESPASS**  
Notary Public, State of New York  
No. 02RE6074522  
Qualified in New York County  
Commission Expires May 20, 2014

NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION****SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Timothy P. Murray  
Lieutenant Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services



June 4, 2013

Mr. Raul V. Bravo  
Raul V Bravo & Associates, Inc.  
1889 Preston White Drive, Suite 202  
Reston, VA 20191

Dear Mr. Bravo:

The Supplier Diversity Office (SDO) is in receipt of your certification renewal information (application). This consists of your request to renew the certification of Raul V Bravo & Associates, Inc. and the required certification renewal information and documentation. Accordingly, SDO has updated your file with this information and documentation. No substantive review of your company was done at this time. **This letter serves as sole and exclusive proof of your firm's SDO certification.**

Based on your certification renewal information (application), the certification of Raul V Bravo & Associates, Inc. as a minority-owned business enterprise (MBE) with the business description of TRANSPORTATION CONSULTANT; CONSULTING IN MASS TRANSIT, PLANNING AND DEVELOPMENT OF VEHICLE AND SYSTEMS has been renewed effective the date of this letter. The company will remain listed in the SDO Directory of certified businesses and The Massachusetts Central Register, which is published by the Office of the Secretary of State unless its certification is revoked. Unless revoked, this certification will last for a period of two years and will automatically expire as of June 28, 2015, unless by that date, the certification of the company is renewed again or the company is recertified.

To renew the company's certification at that time, you will need to submit the following information to SDO no later than 30 business days prior to June 28, 2015.

- 1) All company financial statements since the date of the company's then most recent SDO certification;
- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

**PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT**

- 4) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the

date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."

5) A notarized statement that indicates either "A or B" as referenced below.

- A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."
- B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."

6) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding your certification renewal, please direct them to Ms. Nedra D. White, Director of Certification, at (617) 502-8852.

Very truly yours,

  
Reginald A. Nunnally  
Executive Director



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

MWBE AFFIDAVIT

STATE OF Massachusetts Date April 1, 2014

COUNTY OF Suffolk S.S.

The undersigned being duly sworn, deposes and says that he is the

Principal

Sole Owner, Partner, President, Treasurer, or Other duly Authorized Official of a Corporation

LydRiv Communications

of \_\_\_\_\_  
name of MWBE:

and certifies that since the date of its certification to the  
Massachusetts Office of Supplier Diversity

SDO:

The certification has not been revoked nor has it expired nor has there been any change in the minority  
status of LydRiv Communications

Name of MWBE

[Signature], Principal

Signature and Title of Person Making Affidavit



Sworn to before me this 1 day of April, 2014

Notary Public: [Signature]

My commission expires: August 15, 2019

NOTE: The Offeror must attach the MWBE's most recent certification letter or other documentation  
establishing MWBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION  
SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office of Public Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 100  
Boston, MA 02108-1552

Deva L. Putnick  
Governor  
Timothy J. Murray  
Lieutenant Governor  
Glen Shaw  
Secretary  
Gary J. Lambert  
Assistant Secretary for  
Operational Services

March 25, 2013

Ms. Lydia M. Rivera  
LydRiv Communications  
11 Hallet Street  
Dorchester, MA 02122

Dear Ms. Rivera:

Congratulations on your certification! The Supplier Diversity Office (SDO) is pleased to notify you that your firm was certified as a minority and woman-owned business enterprise (MBE and WBE) with the certified business description, CONSULTING IN COMMUNICATIONS/PUBLIC RELATIONS AND COMMUNITY OUTREACH. This letter serves as sole and exclusive proof of your firm's SDO certification.

Your company will be listed in both the SDO Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill MBE and WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification will automatically expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of March 21, 2015, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification.



- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT:

- 4) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of company name, address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the change. Please be sure to inform the agency or awarding authority you are contracting with of this change for proper payment.

Very truly yours,

Reginald A. Nunnally  
Executive Director

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

MWBE AFFIDAVIT

STATE OF Massachusetts Date: 5/1/14  
COUNTY OF Middlesex S.S.

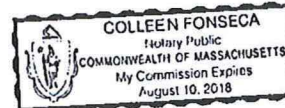
The undersigned being duly sworn, deposes and says that he/she is the  
Principal Owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)  
of RL Controls, LLC  
(name of MWBE)

and certifies that, since the date of its certification by:  
SDO  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority:  
status of RL Controls, LLC  
(Name of MWBE)

John P. White, Principal Owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 1st day of May, 2014  
Notary Public: [Signature]  
My commission expires: 8/10/18



NOTE: The Offeror must attach the MWBE's most recent certification letter or other documentation establishing MWBE certification to this affidavit.



OPERATIONAL SERVICES DIVISION  
SUPPLIER DIVERSITY OFFICE

Reginald Nunnally  
Executive Director

THE COMMONWEALTH OF MASSACHUSETTS  
Executive Office for Administration and Finance  
OPERATIONAL SERVICES DIVISION  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

The Supplier Diversity Office (SDO) is pleased to notify you that your category expansion request has been granted. Your company's current certified business description now reads, COMPONENT LEVEL REPAIR BACK SHOP THAT FOCUSES ON TRANSIT VEHICLE SYSTEMS, INFRASTRUCTURE, AND RIGHT OF WAY TO INCLUDE POWER, TELEMATICS, COMMUNICATION, INFORMATION SOLUTIONS AND LEGACY OR OBSOLETE EQUIPMENT. ADDITIONAL SERVICES INCLUDES ENGINEERING, REPAIR, INSTALLATION, MANUFACTURE AND SUPPORT OF THESE SYSTEMS AND LVPS , PROPULSION & CONTROL, HVAC, VITAL & SIGNAL EQUIPMENT , CONTROL, COMMUNICATION AND WAP REQUIREMENTS; BROKERS OF MRO MATERIAL.

Your category expansion will be listed in both the SDO Certified Business Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;

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TDD: (617) 727-2716

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Fax: (617) 502-8841



- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

- 4) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i. e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director



SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE AFFIDAVIT

STATE OF Massachusetts Date: 5/1/14  
COUNTY OF Middlesex S.S.

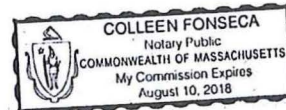
The undersigned being duly sworn, deposes and says that he/she is the  
Principal/owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)  
of RL Controls, LLC  
(name of M/WBE)

and certifies that since the date of its certification by  
SDO  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of RL Controls, LLC  
(Name of M/WBE)

Oliver P. Fonseca Principal/owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 1st day of May, 2014  
Notary Public: [Signature]  
My commission expires: 8/10/18



NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



## OPERATIONAL SERVICES DIVISION

## SUPPLIER DIVERSITY OFFICE

Reginald Nunnally  
Executive Director

THE COMMONWEALTH OF MASSACHUSETTS  
Executive Office for Administration and Finance

## OPERATIONAL SERVICES DIVISION

One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

The Supplier Diversity Office (SDO) is pleased to notify you that your category expansion request has been granted. Your company's current certified business description now reads, COMPONENT LEVEL REPAIR BACK SHOP THAT FOCUSES ON TRANSIT VEHICLE SYSTEMS, INFRASTRUCTURE, AND RIGHT OF WAY TO INCLUDE POWER, TELEMATICS, COMMUNICATION, INFORMATION SOLUTIONS AND LEGACY OR OBSOLETE EQUIPMENT. ADDITIONAL SERVICES INCLUDES ENGINEERING, REPAIR, INSTALLATION, MANUFACTURE AND SUPPORT OF THESE SYSTEMS AND LVPS , PROPULSION & CONTROL, HVAC, VITAL & SIGNAL EQUIPMENT , CONTROL, COMMUNICATION AND WAP REQUIREMENTS; BROKERS OF MRO MATERIAL.

Your category expansion will be listed in both the SDO Certified Business Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

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Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

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TDD: (617) 727-2716

Fax: (617) 502-8841

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- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

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Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i. e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE AFFIDAVIT

STATE OF Massachusetts Date: 5/1/14  
COUNTY OF Middlesex S.S.

The undersigned being duly sworn, deposes and says that he/she is the  
Principal Owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)  
of RL Controls, LLC  
(name of M/WBE)

and certifies that since the date of its certification by  
SDO  
(SDO)

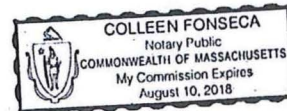
the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of RL Controls, LLC  
(Name of M/WBE)

John R. Riddle Principal Owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 1st day of May, 2014

Notary Public: [Signature]

My commission expires: 8/10/18



NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.





## OPERATIONAL SERVICES DIVISION

## SUPPLIER DIVERSITY OFFICE

Reginald Nunnally  
Executive Director

THE COMMONWEALTH OF MASSACHUSETTS  
Executive Office for Administration and Finance  
OPERATIONAL SERVICES DIVISION  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

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Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

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TDD: (617) 727-2716

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Fax: (617) 502-8841

- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

- 4) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i. e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF New York Date: 4/25/14

COUNTY OF New York S.S.

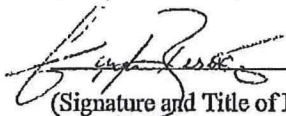
The undersigned being duly sworn, deposes and says that he/she is the

PRESIDENT  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of MRI USA Inc.  
(name of M/WBE)

and certifies that since the date of its certification by  
SDO  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of MRI USA Inc.  
(Name of M/WBE)

 GAYLE BERNSTEIN  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 25 day of April, 2014

Notary Public, Crystal Rodriguez

My commission expires: April 23, 2015

**CRYSTAL RODRIGUEZ**  
Notary Public, State of New York  
No. 01RO6164417  
Qualified in Bronx County  
Commission Expires April 23, 2015

NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



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PAGE 03/04

**OPERATIONAL SERVICES DIVISION****SUPPLIER DIVERSITY OFFICE**Reginald Nunnally  
Executive Director**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**One Ashburton Place, Suite 1017  
Boston, MA 02108-1552Deval L. Patrick  
GovernorGlen Shor  
SecretaryGary J. Lambert  
Assistant Secretary for  
Operational Services

March 10, 2014

Ms. Gayle Bernstein  
MRI USA, Inc.  
228 East 45th Street, Suite 1801  
New York, NY 10017

Dear Ms. Bernstein:

The Supplier Diversity Office (SDO) is in receipt of your certification renewal information (application). This consists of your request to renew the certification of MRI USA, Inc. and the required certification renewal information and documentation. Accordingly, SDO has updated your file with this information and documentation. No substantive review of your company was done at this time. **This letter serves as sole and exclusive proof of your firm's SDO certification.**

Based on your certification renewal information (application), the certification of MRI USA, Inc. as a woman-owned business enterprise (WBE) with the business description of **LOGISTICS CONSULTING AND INLAND TRANSPORTATION OF MASS TRANSIT RAIL VEHICLES AND PARTS** has been renewed effective the date of this letter. The company will remain listed in the SDO Directory of certified businesses and The Massachusetts Central Register, which is published by the Office of the Secretary of State unless its certification is revoked. Unless revoked, this certification will last for a period of two years and will automatically expire as of March 11, 2016, unless by that date, the certification of the company is renewed again or the company is recertified.

To renew the company's certification at that time, you will need to submit the following information to SDO no later than 30 business days prior to March 11, 2016.

- 1) All company financial statements since the date of the company's then most recent SDO certification;
- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

**PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT**

- 4) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Woman/Woman business enterprise have occurred since the

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TDD: (617) 727-2716

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Fax: (617) 502-8841



08/21/2007 14:18 2126283851

PAGE 04/04

date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."

5) A notarized statement that indicates either "A or B" as referenced below.

- A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."
- B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."

6) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

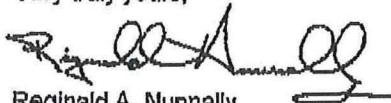
Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding your certification renewal, please direct them to Ms. Nedra D. White, Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE AFFIDAVIT

STATE OF PENNSYLVANIADate: 5/10/2014COUNTY OF DELAWARE

S.S.

The undersigned being duly sworn, deposes and says that he/she is the

BETTY A. SCOTT CEO/PRESIDENT

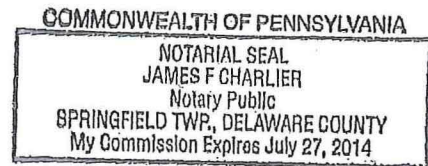
(Sole Owner; Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of UTCRAS INC  
(name of M/WBE)

and certifies that since the date of its certification by

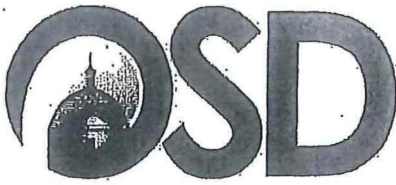
COMMONWEALTH OF PA  
(SDO)the certification has not been revoked nor has it expired nor has there been any change in the  
minority status of UTCRAS INC  
(Name of M/WBE)Betty A. Scott CEO/PRESIDENT

(Signature and Title of Person Making Affidavit)

Sworn to before me this 10 day of MAY, 2014Notary Public: James F. CharlierMy commission expires: JULY 27, 2014

NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.





THE COMMONWEALTH OF MASSACHUSETTS  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**

One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

May 12, 2014

Ms. Betty Scott  
UTCRA, Inc. fka: UTC/Rail & Airsources, Inc.  
17 Country Lane  
Malvern, PA 19355

Dear Ms. Scott:

Congratulations on your certification! The Supplier Diversity Office (SDO) is pleased to notify you that your firm was certified as a woman-owned business enterprise (WBE) with the certified business description, **PRECISION MACHINE AND SHEET METAL FABRICATORS: SPECIALIZING IN RAILROAD WHEELS AND AXLE SETS, TRUCK ASSEMBLY, REMANUFACTURE ROLLER BEARINGS, TRAINLINE JUMPERS AND OTHER METAL COMPONENT RAILROAD TRAIN CAR ASSEMBLIES, BUILT TO PRINT, ALSO HEAVY STRUCTURAL STEEL INFRASTRUCTURE FABRICATORS FOR BRIDGE WORK, DISTRIBUTORS OF ALP DISC BRAKE.** This letter serves as sole and exclusive proof of your firm's SDO certification.

Your company will be listed in both the SDO Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification will automatically expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of May 9, 2016, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;

- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT:

- 4) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Woman/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of company name, address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the change. Please be sure to inform the agency or awarding authority you are contracting with of this change for proper payment.

Very truly yours,



Reginald A. Nunnally  
Executive Director



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION OF COMPLIANCE WITH REGULATION 102 CMR 12.00**  
**DEPENDENT CARE ASSISTANCE PROGRAM INCLUDING CHILD CARE**

The undersigned hereby certifies that the Offeror is in compliance with Section 7 of Chapter 521 of the Acts of 1990, as amended by Chapter 329 of the Acts of 1991, and the regulations issued pursuant thereto, 102 CMR 12.00, and that the Offeror is either a qualified employer having fifty (50) or more full time employees and has established a dependent care assistance program, or offers its employees child care tuition assistance or on-site or near site subsidized child care placements, or is an exempt employer.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**PROHIBITED USE OF UNDOCUMENTED WORKERS CERTIFICATION**

The Offeror agrees to comply with Massachusetts Executive Order 481, which applies to all state agencies in the Executive Branch, including all executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established. As it is the policy of the Executive Branch to prohibit the use of undocumented workers in connection with the performance of state contracts, all contracts entered into after February 23, 2007 require that contractors, as a condition of receiving Commonwealth funds under any Executive Branch contract, make the following certification:

**CERTIFICATION:**

As evidenced by the signature of the Offeror's Authorized Signatory below, the Offeror certifies under the pains and penalties of perjury that the Offeror shall not knowingly use undocumented workers in connection with the performance of all Executive Branch contracts; that pursuant to federal requirements, the Offeror shall verify the immigration status of all workers assigned to such contracts without engaging in unlawful discrimination; and that the Offeror shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker(s). The Offeror understands and agrees that breach of any of these terms during the period of each contract may be regarded as a material breach, subjecting the Offeror to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

The Offeror is required to sign this Certification only once and may provide a copy of the signed Certification for any contract executed with an Executive Branch Department. A copy of this signed Certification must be attached to the "record copy" of all contracts with this Offeror that are filed with the contracting Department.

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**CERTIFICATION REGARDING COMPANIES DOING BUSINESS**  
**WITH OR IN NORTHERN IRELAND**

Pursuant to M.G.L. c.7 §§ 22C-F, the undersigned, being an authorized representative of the Offeror, hereby certifies under the pains and penalties of perjury that (check applicable item):

1. ☒ The Offeror does not employ ten (10) or more employees in an office or other facility located in Northern Ireland.
2. ☐ The Offeror does employ ten (10) or more employees in an office or other facility located in Northern Ireland and certifies that:
  - (a) ☐ The Offeror does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief; and
  - (b) ☐ The Offeror promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and
  - (c) ☐ The Offeror is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in Northern Ireland.
3. ☐ The Offeror does not certify to either 1 or 2(a-c) above.

Signed under the pains and penalties of perjury:

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**MBTA RETIREE CERTIFICATION**

In accordance with Section 3.3 of the MBTA Hiring of MBTA Retirees Policy dated June 5, 2009, THE CONTRACTOR IS REQUIRED TO NOTIFY THE MBTA THAT AN MBTA RETIREE HAS BEEN INCLUDED AS A MEMBER OF ITS TEAM.

Every contractor is required to notify the MBTA as part of the bidding process that an MBTA retiree will be included as a member of its team. The contractor shall be required to provide the name and date of retirement for each MBTA retiree on the team. Every MBTA retiree working for the MBTA under this condition shall do so in accordance with M.G.L., c 268A, Section 5.

Project Name: RFP NO. CAP 27-10 NEW ORANGE AND RED LINE VEHICLES

Is a MBTA Retiree(s) presently included as a member of the team?

Yes   X   No           

If you responded "yes" to the above question, the Contractor certifies that the following MBTA Retirees are assigned to the team for this contract.

<u>Firm Name</u> (Please Print)	<u>Retiree Name</u>	<u>MBTA Retirement Date</u>
<u>Rdoyle Transit Consulting</u>	<u>Mr. Robert H. Doyle, Jr.</u>	<u>May 1, 2008</u>
<u>LydRiv Communications</u>	<u>Ms. Lydia M. Rivera</u>	<u>May 31, 2012</u>
<u>B&amp;C Transit, Inc.</u>	<u>Mr. Robert MacDonald</u>	<u>November 1, 1991</u>
	<u>Mr. John T. Hynes</u>	<u>November 1, 2010</u>

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

If additional space is required, please enclose attachments to be included with your proposal.



## SECTION B

**PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY****Manufacturer Subcontractors/Suppliers**

(re: Section C5.15F notes the minimum "Major Equipment" suppliers to be listed. Additional suppliers, if known, should be provided)

**Domestic (D)**  
**Foreign (F)**

**Assignments****M/WBE Status**

NAME: Mitsubishi Electric Power Products,  
Inc.

D

Propulsion System;  
APS and LVP;  
HVAC; Vehicle  
Monitoring System

N/A

ADDRESS: THORN HILL INDUSTRIAL PARK  
530 KEYSTONE DRIVE  
WARRENDALE, PA 15086-7538  
USA

and Network  
Equipment and  
Integrator;

NAME: TOYO DENKI USA, Inc

D

Propulsion System;  
APS and LVP;  
Vehicle Monitoring  
System and  
Network Equipment  
and Integrator

N/A

ADDRESS: 2507 Lovi Road, Freedom PA  
15042

NAME: CNR Changchun Railway Vehicle  
Co., Ltd.

F

Carbody

N/A

ADDRESS: No.2001 Changke Road,  
Changchun, China

NAME: UTCRAS, Inc  
501 Highland Avenue Morton PA

D

Wheelsets

YES

ADDRESS: 19070

## SECTION B

PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITYManufacturer Subcontractors/Suppliers

(re: Section C5.15F notes the minimum "Major Equipment" suppliers to be listed. Additional suppliers, if known, should be provided)

	<u>Domestic (D)</u> <u>Foreign (F)</u>	<u>Assignments</u>	<u>M/WBE Status</u>
NAME: Wabtec Passenger Transit A Division of Westinghouse Air Brake Technologies	D	Coupler; Current Collector	N/A
ADDRESS: 130 Ridgview Center Drive Duncan, SC 29334		Air Brake Equipment and Controls	
NAME: Ellcon National Inc. (Faiveley Transport)	D	Door Systems; HVAC;	N/A
ADDRESS: 50 Beechtree Blvd. Greenville, SC USA		Air Brake Equipment and Controls	
NAME: ALSTOM Signaling Inc.	D	Cab Signal	N/A
ADDRESS: Rochester NY		Equipment	
NAME: ANSALDO STS USA, Inc	D	Cab Signal	N/A
ADDRESS: 1000 Technology Drive Pittsburgh, PA 15219		Equipment	
NAME: Vapor Stone Rail Systems a division of Westinghouse Air Brake Technologies Corporation, d/b/a Wabtec Corp.	D	Door Systems	N/A
ADDRESS: 72 Arizona Ave., Plattsburgh, NY 12903			

## SECTION B

**PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY****Manufacturer Subcontractors/Suppliers**

(re: Section C5.15F notes the minimum "Major Equipment" suppliers to be listed. Additional suppliers, if known, should be provided)

	<b><u>Domestic (D)</u></b> <b><u>Foreign (F)</u></b>	<b><u>Assignments</u></b>	<b><u>M/WBE Status</u></b>
NAME: <u>Kustom seating</u>	<u>D</u>	<u>Seats</u>	<u>N/A</u>
ADDRESS: <u>Kustom Seating Unlimited / 3000</u> <u>Madison St, Bellwood, IL 60104</u>			
NAME: <u>Freedman Seating Company</u>	<u>D</u>	<u>Seats</u>	<u>N/A</u>
ADDRESS: <u>4545 W. Augusta Blvd, Chicago, IL</u> <u>60651</u>			
NAME: <u>RL Controls, LLC</u>	<u>D</u>	<u>Communications</u>	<u>YES</u>
ADDRESS: <u>10-V Gill Street Woburn, MA 01801</u>		<u>Equipment including</u> <u>LED and LCD</u> <u>Signage</u>	
NAME: <u>LECIP Inc.</u>	<u>D</u>	<u>Lighting</u>	<u>N/A</u>
ADDRESS: <u>1011 East Touhy Avenue, Suite 140</u> <u>Des Plaines, Illinois 60018 USA</u>			
NAME: <u>TDG Transit Design Group, Inc.</u>	<u>D</u>	<u>Lighting</u>	<u>N/A</u>
ADDRESS: <u>NIAGARA FALLS, NY USA</u>			

## SECTION B

PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITYManufacturer Subcontractors/Suppliers

(re: Section C5.15F notes the minimum "Major Equipment" suppliers to be listed. Additional suppliers, if known, should be provided)

	<u>Domestic (D)</u> <u>Foreign (F)</u>	<u>Assignments</u>	<u>M/WBE</u> <u>Status</u>
NAME: <u>Ultimate Transportation N. America, LLC</u>	<u>D</u>	<u>Interior Linings</u>	<u>N/A</u>
ADDRESS: <u>30914 San Antonia St. Hayward, CA 94544</u>	<u></u>	<u></u>	<u></u>
NAME: <u>RTR Technologies, Inc.</u>	<u>D</u>	<u>Heating Equipment</u>	<u>N/A</u>
ADDRESS: <u>48 Main Street PO BOX 67</u> <u>Stockbridge, MA</u>	<u></u>	<u></u>	<u></u>
NAME: <u>Saft America, Inc.</u>	<u>D</u>	<u>Battery</u>	<u>N/A</u>
ADDRESS: <u>Valdosta GA</u>	<u></u>	<u></u>	<u></u>
NAME: <u>AM Equipment</u>	<u>D</u>	<u>Electrical Rain Wiper</u>	<u>N/A</u>
ADDRESS: <u>PD Box 790 402E. Hazel Jefferson DR</u> <u>97352</u>	<u></u>	<u></u>	<u></u>
NAME: <u>Bach-Simpson A Division of Wabtec</u> <u>Canada Inc.</u>	<u>F</u>	<u>Event Recorder</u>	<u>N/A</u>
ADDRESS: <u>109 Meg Drive, P.O. Box 5484 London,</u> <u>Ontario, Canada N6A 4L6</u>	<u></u>	<u></u>	<u></u>



## SECTION B

PART B TECHNICAL PROPOSAL AND STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITYManufacturer Subcontractors/Suppliers

(re: Section C5.15F notes the minimum "Major Equipment" suppliers to be listed. Additional suppliers, if known, should be provided)

	<u>Domestic (D) Foreign (F)</u>	<u>Assignments</u>	<u>M/WBE Status</u>
NAME: Baultar Concept Inc. ADDRESS: 355 RRC INDUSTRIEL WINDSOR, QUEBEC, CANADA	F	Floor	N/A
NAME: SIMUTECH INTERNATIONAL CO., LTD ADDRESS: No.10 Hong Fu Industry Park Bei Qi Jia Town Chang Ping District Beijing China	F	Training Simulator	N/A
NAME: FAAC, Incorporated ADDRESS: 1229 Oak Valley Drive Ann Arbor, Michigan 48108	D	Training Simulator	N/A
NAME: Bradken, Inc. ADDRESS: Bradken - Atchison, KS/St. Joe, MO	D	Truck Frame	N/A
NAME: ToA Communication Systems, Inc. ADDRESS: 92 MAIN STREET UNIT 208 YONKERS, NY 10701	D	Communications equipment including LED and LCD Signage	N/A

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

Acknowledgment of Addenda is hereby established below:

**ACKNOWLEDGMENT OF ADDENDA**

Addenda No.	Dated	Received
<u>1</u>	<u>January 10, 2014</u>	<u>×</u>
<u>2</u>	<u>January 14, 2014</u>	<u>×</u>
<u>3</u>	<u>January 24, 2014</u>	<u>×</u>
<u>4</u>	<u>January 27, 2014</u>	<u>×</u>
<u>5</u>	<u>January 30, 2014</u>	<u>×</u>
<u>6</u>	<u>February 20, 2014</u>	<u>×</u>
<u>7</u>	<u>March 4, 2014</u>	<u>×</u>
<u>8</u>	<u>April 1, 2014</u>	<u>×</u>
<u>9</u>	<u>April 3, 2014</u>	<u>×</u>
<u>10</u>	<u>April 14, 2014</u>	<u>×</u>

Failure to acknowledge receipt of all Addenda may cause the proposal to be considered non-responsive to the solicitation.

Acknowledgment of receipt of each Addendum must be duly established and included with this Offer (See the above table).

OFFEROR: CNR MA Corporation

AUTHORIZED SIGNATURE: 

NAME (PRINTED): Mr. Yanbin Yu

TITLE: Treasurer

DATE: May 15, 2014

# **Technical Proposal**

**for**

## **MBTA RFP No. CAP 27-10 New Orange and Red Line Vehicles**

**May 15, 2014**

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## 1 TECHNICAL APPROACH

### 1.1 ORGANIZATION AND PROJECT STAFF

Below is the RFP requirement for the proposed Organization and Project Staff:

**Tab I.1 (a) Organization Chart, Resume and Responsibilities of Key Staff**

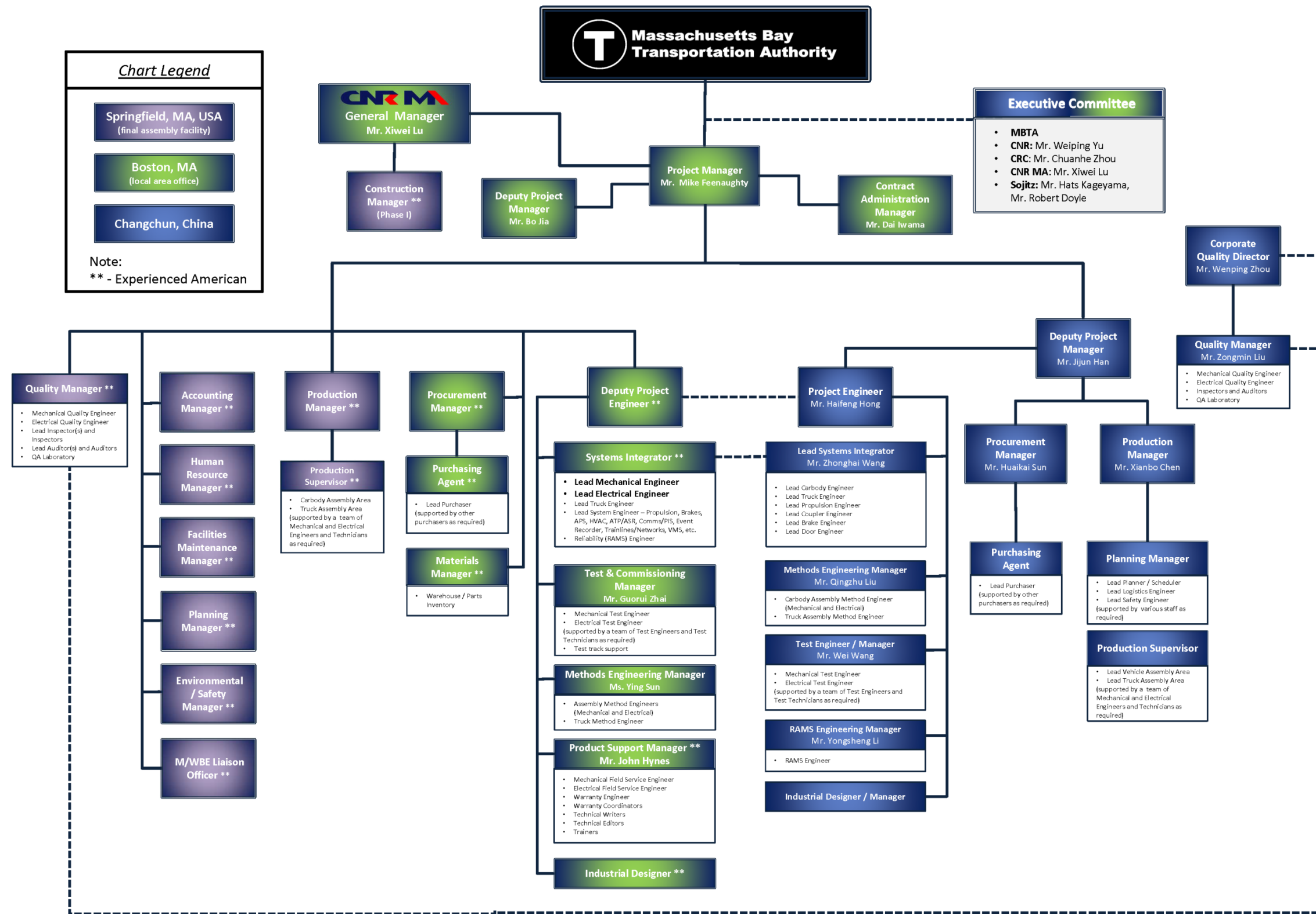
*Provide a detailed organization chart (with names) of the project staff including, but not limited to Program Manager, Production Manager, Lead Electrical Engineer, Lead Mechanical Engineer, System Engineer (System Integration) Quality Engineer, Warranty and Reliability Engineers, Field Support Manager, Training and Manuals Manager. Include a detailed one-paragraph resume of each individual's experience, which directly applies to this project. A matrix of the responsibilities, location, and decision making authority, of the key staff shall be included.*

*The proposed staff must be the staff which will actually fill each identified role and deliver the services defined in the contract and the proposal. Changes of key individuals require the prior approval of the Authority.*

China CNR Corporation Limited (CNR), one of the largest rail vehicle equipment manufacturers and its subsidiary, CNR Changchun Railway Vehicles Co., Ltd. (CNR CRC), have formed a joint venture, CNR MA Corporation, in Massachusetts, herein referred to as "CNR" to supply rail vehicles and equipment to North America and beyond. CNR has assembled a team of key staff members that will be dedicated to the MBTA Orange Line and Red Line project. CNR have made a long-term commitment to delivering new passenger rail equipment to the U.S. market and, as part of this long-term strategy, CNR is establishing its U.S. headquarters in Massachusetts. By establishing a permanent manufacturing facility in Massachusetts, CNR will be linked to the State of Massachusetts for many years to come. CNR will use these facilities on all future rail rolling stock equipment projects in North America and abroad. CNR's leadership capabilities and financial strength, and CRC's engineering and manufacturing experience, makes this team uniquely qualified to execute this project with unqualified success. The assigned staff members have extensive experience in the design, manufacture, quality assurance, testing and commissioning and delivery of rail vehicles, including modern stainless steel carbody construction.

#### 1.1.1 Organization Charts by Facility

The project team consists of key individuals that are identified on the following organization chart, which identifies the staff by location. All the staff in these locations, Massachusetts, U.S. and Changchun, China, will report through the U.S. experienced Project Manager, whom CNR has appointed for this project, and who will be located in the Boston local office.





### 1.1.2 Roles, Responsibilities and Experience of Key Staff

The key individuals for this project are identified below, and are listed by facility location. Along with the role they will play for the MBTA project, their experience with the manufacturing of railcars is also identified.

#### **Personnel at CNR Massachusetts, U.S. – Boston Local Office / Springfield Facility:**

The project will be managed from the Boston local office. CNR has designated the following key people and responsibilities listed below, in addition to those positions that CNR will hire experienced American workers to fill certain positions identified on the Organization Chart found in Section 1.1.1.

The General Manager, **Mr. Xiwei Lu**, will be the chief representative of CNR on site and responsible for the comprehensive management on the project site and the general work of the project; he will coordinate, dispose and resolve the problems occurring in the implementation of the project and report to the corporation. At the same time, Mr. Lu will also coordinate and deal with outstanding issues during project implementation, and report up to headquarters in China. It is noted that the General Manager will not be responsible for running the project, but to ensure that the Project Manager has all authority and dedicated resources and equipment necessary to run the project.

The Project Manager, **Mr. Mike Feenaughty**, will have a full authority to manage and oversee the overall project execution from the Boston office, and will be the single point of contact for all communications with the MBTA. Mr. Feenaughty has been working for several railcar manufacturers over the past 28 years and specifically in management roles for the past 19 years. His most recent role has been the U.S. Tender Director of Rolling Stock and Components at Alstom Transportation Inc., in which he successfully managed tenders valued at over \$500 Million. As of January 2014, Mr. Feenaughty was responsible for a factory workforce increase from 30 to 300 personnel in a timeframe of a year and a half. His Project Management skills and responsibilities included the \$330 Million WMATA 6000 Series project, the first WMATA project to achieve contract reliability goals and achieve final vehicle acceptance. Mr. Feenaughty also managed the design / build and delivery of 60 Amtrak Surfliner rail cars that were delivered on time and under budget.

The Deputy Project Manager, **Mr. Bo Jia**, will work closely with the Project Manager to oversee the development of the project both in China and in the U.S. Currently, Mr. Jia is the General Manager Assistant of CNR Changchun Railway Vehicles Co. Ltd He joined CNR in 1993, and is currently one of the senior experts in the rail industry. From 2001 to 2007, he worked as director of Mass Transit Vehicles Design Dept., jointly led many design projects for large metro projects, such as Beijing metro, and Tianjin metro. In 2007, he was appointed as vice chief engineer. Since then, he has been participating and leading several metro projects such as Beijing metro, Shenzhen metro, Thailand metro, Hong Kong metro, Brazil metro, and Saudi Arabia metro.

The Contract Administration Manager, **Mr. Dai Iwama**, has over 18 years of professional experience in the area of Marketing and Sales, with 8 year specifically focused in the transportation industry. Mr. Iwama has worked as a contract administrator for the following projects: Propulsion System for Long Island Rail Road/Metro-North Railroad M-7 EMU; HVAC system for NJ Transit/AMT/Maryland MTA Multi Level Coaches; SEPTA Silverliner V EMU Project. He will directly support the Project Manager on the MBTA project.

The Deputy Project Engineer, an American with sound experience in the passenger transit industry, will be responsible for all engineering related activities that will take place in the Springfield facility. He will have the following direct reports: Lead Mechanical Engineer, Lead Electrical Engineer, other

system engineers, and Systems Integrator. The Deputy Project Engineer will also oversee and be responsible for Testing & Commissioning activities, Methods Engineering, Product Support, and Industrial Design.

The Systems Integrator will be a locally-hired and skilled American with adequate experience in the passenger transportation industry. This person will be responsible for will controlling and monitoring the systems integration functions during the vehicle design process, including participation in the execution and acceptance of all vehicle, system, subsystem, and component qualification testing. At the top level, this includes the external interfaces of the electrical and mechanical systems with the railcars and existing MBTA systems, including wayside equipment, communications command centers, and maintenance facilities. This also includes the internal interfaces between the various onboard vehicle electrical and mechanical systems.

The Systems Integrator will be a locally-hired and skilled American with adequate experience in the passenger transportation industry. This person will be responsible for will controlling and monitoring the systems integration functions during the vehicle design process, including participation in the execution and acceptance of all vehicle, system, subsystem, and component qualification testing. At the top level, this includes the external interfaces of the electrical and mechanical systems with the railcars and existing MBTA systems, including wayside equipment, communications command centers, and maintenance facilities. This also includes the internal interfaces between the various onboard vehicle electrical and mechanical systems.

The Systems Integrator will be a locally-hired and skilled American with adequate experience in the passenger transportation industry. This person will be responsible for will controlling and monitoring the systems integration functions during the vehicle design process, including participation in the execution and acceptance of all vehicle, system, subsystem, and component qualification testing. At the top level, this includes the external interfaces of the electrical and mechanical systems with the railcars and existing MBTA systems, including wayside equipment, communications command centers, and maintenance facilities. This also includes the internal interfaces between the various onboard vehicle electrical and mechanical systems.

The Production Manager will be a locally-hired and skilled American whose responsibilities will include the management and overall coordination of the production of the railcars at the Springfield facility.

The Quality Manager, who will be a locally-hired and skilled American, will be mainly responsible for the quality assurance, quality control planning and implementation of the electric system of the vehicle assembly, quality management and control planning and implementation of the purchased electric parts and participate in the building and routine maintenance of the quality system.

The Planning Manager will be responsible for the establishment, organization, planning and implementation of the general production plan to ensure the on-time delivery of the railcars to the MBTA; will develop, maintain, and update project schedule at the Springfield facility; assist the project manager and other key staff in communication and coordination of the relevant items of the project plan; provide the monthly progress report of the project. This position will also be filled by a highly skilled American.

The Methods Engineering Manager, **Ms. Ying Sun**, has been engaged in manufacturing engineering for passenger car projects since 2001, which included preparation of technical plans and documents, designation of production resource skills, facilities, and jigs, work sequencing, organization of tests and solving key problems, and provided ongoing technical support for manufacturing. Ms. Sun is the process director and process manager for Pakistan Project, Beijing

Line 5 Project, Tianjin Coastal Express Project, Hong Kong WIL Project, Brazil Rio Line 1A Project and Brazil Rio Line 4 Project. Ms. Sun's role as the Methods Engineering Manager for this MBTA project will include performing technical analysis and producing technical proposals and documents for the production configuration. She will also be responsible for organizing and planning of manufacturing work flow at the Springfield project site; and establishing process documents and process plans used in the production; be responsible for the process planning of the interfaces between assembly and commissioning and Trucks; and also cooperate with the training manager to carry out well the technical training of the on-site operators.

The Test & Commissioning Manager, **Mr. Guorui Zhai**, is a highly experienced electrical design engineer with knowledge of electrical schematic designs for many projects, and has extensive experience in commissioning. Mr. Zhai will be responsible for establishment of the test and commissioning process flow and organizing the verification of the test program; and for organizing the static and dynamic testing of the vehicles. He will also provide technical instruction and support during the commissioning phase.

The Procurement Manager will be responsible for the purchase of materials used in the production of the railcars. Purchasing Agents will assist the Procurement Manager in completing the purchase of materials and organize the arrival of goods and other relevant purchasing work. Both of these roles will be filled by locally-hired and skilled Americans.

The Materials Manager, also a locally-hired and skilled American, will be responsible for organization and coordination of all the materials allocation for production; Will be responsible for organization and coordination of planning, organization and control of warehousing, storage, keeping and issuing of some materials such as purchased parts and other parts; be responsible for organizing and reporting the logistic information of the purchased materials.

The Construction Manager will be responsible for the oversight and management of the construction of the Springfield facility. We intend to retain the construction manager after the construction work has been finished.

The Product Support Manager, **Mr. John Hynes**, is an accomplished manager with over twenty-five years of progressive experience and responsibility in transportation and project management. Highly developed administrative and management skills, Mr. Hynes has the ability to effectively communication, supervise staff, develop and manage budgets, and schedule labor and training of large workforce.

An M/WBE Liaison Officer will be appointed by CNR. This will be a dedicated long term position to ensure that M/WBE participation is maximized for all CNR projects. This person will be locally-hired and skilled American. Further information is provided in the M/WBE Plan.

#### **Personnel at CNR China – Changchun Facility:**

The Pilot phase will be led by CNR Changchun to draw on their experience and familiarity with CNR designs and practices.

The Deputy Project Manager, **Mr. Jijun Han**, has extensive experience in the design and associated technologies for mass transit rail vehicles. He also has on-site vehicle management experience. Since 2006, he has been working as a project manager for CRC. In addition to being familiar with the project management process in China and overseas, Mr. Han has successfully organized the implementation of multiple rolling stock projects. Mr. Han also has a Project Management (PMP) certification approved by the Project Management Institute (PMI). Specifically for the MBTA

project, Mr. Han will be responsible for establishing, instructing, and monitoring the activities of the project team from the beginning to the end of the project.

The Corporate Quality Director, **Mr. Wenping Zhou**, has been engaged in vehicle design and manufacturing methods for many years. He has served as Director of the Mainline Engineering Department, and has a wealth of experience in vehicle design. Leading a team, Mr. Zhou has successfully completed the design of over 10 mainline passenger train projects and EMU projects, and has been directly responsible for quality management since 2009. As quality supervisor of the company, he is in charge of the preparation and implementation of the quality strategy, quality plan, quality guidelines, quality system and relevant systems under the leadership of the general manager. He takes full responsibility for: company quality management; improvement of product quality; the preparation of the overall quality strategy; the of review quality control policies, procedures, systems and operational regulations; supervision and review of the implementation of quality policies and systems; taking charge of the quality control of the supply chain; the organization of important quality issue analysis meetings; the direction of, and dealing with, major quality risk and accident work.

The Quality Manager, **Mr. Zongmin Liu**, has a significant amount of quality management exposure for several different types of projects. Mr. Liu has experienced being involved with the pipe assembly for a water supply and instructional work for the fitter technology. He was also engaged in some overseas projects by providing translation and assistance in the commercial inspection portions. He has continued to provide his services and skills to other projects which include Bangkok (BTS), HK WIL and SIL projects, and Brazil EMU. Specifically for the MBTA project, Mr. Liu will be in charge of managing and monitoring the project quality work and finding different ways of improving the quality. Mr. Liu reports directly to the Corporate Quality Director, Mr. Wenping Zou.

The Production Manager, **Mr. Xianbo Chen**, has been engaged in production management for many years, currently he is the director of Production Manager's Office, with a wealth of experience in production management, he is good at organization and coordination, and he is skilled at production system management software, such as SAP and P3E, he has production management experience for more than 10 domestic and overseas projects, all meet milestone and key dates requirement. He will serve as production manager for this MBTA project, take charge of establishment and improvement of production control system, prepare production plan, check production condition to ensure completion of production tasks. He will be in charge of inspecting and auditing the production schedule, as well as providing instructions to the US manufacturing facility in Massachusetts.

The Procurement Manager, **Mr. Huaikai Sun**, has previously managed CRC's procurement department for various urban railway projects, such as: Brazil EMU, Brazil 1A, Hong Kong (HK) WIL, HK SIL, and the Ethiopia project. Mr. Sun's role on the MBTA project will be to manage the procurement process, and will work closely with the Procurement Manager in the Springfield, Massachusetts facility.

The Project Engineer, **Mr. Haifeng Hong**, has been engaged in technical management for Beijing Line 15 and Beijing line 6 metro projects, Beijing Linear Motor Airport Express, Chongqing Monorail, and now he is Deputy Director in CRC technical design department. For MBTA project, he will be responsible for Technical & Design work.

The Systems Integrator, **Mr. Zhonghai Wang**, for MBTA project will be responsible for systems integration work. Overall charging and reviewing all interface between all subsystems, including interior and exterior systems. He has the experience of being interface manager for WIL & SIL



project of HK. He also has been the design engineer of electrical system for many projects, such as Shen Yang Line 1, Shang Hai Line 6&8, Chong Qing Line 1.

The Method Engineer, **Mr. Qingzhu Liu**, has been part of the carbody manufacturing process as well as other technology developments for stainless steels. Since 2006, Mr. Liu has been in charge of organizing each professional technical team in order to further develop their technology and production services. He was the Technology Manager of the HK SIL, Beijing line #5, #10, #13 & #15, and Shenyang Metro projects. Mr. Liu's role as the Technology Manager for this MBTA project will include him developing technical analysis, producing technical proposals and documents for the production configuration, and fulfilling the design drawing specifications.

The Test Engineer, **Mr. Wei Wang**, has handled projects dealing with the application of new energies and equipment modifications. He was also engaged in designing the brakes and providing the optimal efficiency design for the brake system. Since 2008, Mr. Wang has been responsible for type testing, RAMS, and R&D management. For the MBTA project, he will be responsible for establishment of debugging process flow and organizing the verification of the experiment program; and for organizing the static and dynamic debugging of the vehicles.

The RAMS Management Engineer, **Mr. Yongsheng Li**, has acquired a variety of skills and knowledge that proved to be valuable on past projects. He was the RAMS manager for the BTS option car project, in which he was in charge of the design and management of RAMS-related tasks. He was also the RAMS manager for Beijing #15, Haerbing Line #1, and Chengdu Line #3 & #4 projects. For the MBTA project, Mr. Li will be responsible for providing the reliability analysis for the system, producing the reliability prediction reports, and organizing the reliability test and maintenance validation activities, formulating security design plan, organizing hazard identification and evaluation, and organizing the FMECA, Fault Tree Analysis, and System Safety Hazard Analysis (SSHA), and other related analyses.

### 1.1.3 Responsibilities Matrix

Name	Title	Responsibilities	Location	Decision Making Authority
Mr. Xiwei Lu	General Manager	Chief representative of the corporation; be responsible for the comprehensive management on the project site and the general work of the project.	USA	To make decisions for major issues on-site, and manage the leaders of each department.
Mr. Mike Feenaughty	Project Manager	Assist the general manager in completing the comprehensive management on the site; organizing all the meetings related to the project, supervise, inspect, coordinate and examine the implementation of the resolutions of the meetings; manage project cost, progress and quality.	USA	Solve the problems existing during project implementation, and report to general manager regularly.

Name	Title	Responsibilities	Location	Decision Making Authority
Mr. Bo Jia	Deputy Project Manager	Assist the project manager to implement on-site management work; collect, sort, statistics, analyze, conclude, and report information during project, and to prepare and update the communication information between each relevant departments.	USA	Focusing on the project plan, production progress management, and temporarily deal with the project's issues entrusted by the project manager.
Mr. Jijun Han	Deputy Project Manager	Assist the project manager in completing the comprehensive management in China; organizing all the meetings related to the project, supervise, inspect, coordinate and examine the implementation of the resolutions of the meetings; manage project cost, progress and quality for activities in China.	China	Solve the problems existing during project implementation, and report to the project manager regularly.
Mr. Dai Iwama	Contract Administration Manager	Support the Project Manager on the MBTA project with regards to Contract Administration tasks, such as manage communications with subcontractors, maintain contract records and logs, and use standard contract principles by establishing internal policies and procedures.	USA	Make decisions directly related to Contract Administration related issues.
TBD	Quality Manager	Responsible for planning, organizing and implementing the project quality management work; in charge of establishing quality management system, quality inspection before using, FAI and products' quality at the Springfield facility.	USA	Be responsible for produce the quality standard, and delivery inspection.
Mr. Zongmin Liu	Quality Manager	Responsible for planning, organizing and implementing the project quality management work; in charge of establishing quality management system, quality inspection before using, FAI and products' quality.	China	Be responsible for produce the quality standard, and delivery inspection.
TBD	Deputy Project Engineer	Be responsible for the management of the technical team for the design process, testing and commissioning, methods engineering, and product support after-sale service in the implementation of the project.	USA	Decision-making in technical issues of this project; be responsible for instructing, monitoring, assessing the technical management.

Name	Title	Responsibilities	Location	Decision Making Authority
Mr. Haifeng Hong	Project Engineer	Be responsible for the technical support in the whole process on-site design changes, purchase, manufacturing, experiment and after-sale service in the implementation of the project; be responsible for management of the on-site technical team.	China	Decision-making in technical issues of this project; be responsible for instructing, monitoring, assessing the technical management.
TBD	Systems Integrator	Be responsible for the technical guidance and support of the systems integration of the vehicles in the U.S.	USA	In charge of the system integration and standard clarification, and report the major issues to Deputy Project Engineer.
Mr. Zhonghai Wang	Lead Systems Integrator	Be generally responsible for the technical guidance and support, etc. of the systems integration of the vehicles on the site.	China	In charge of the system integration and standard clarification, and report the major issues to Project Engineer.
Mr. Qingzhu Liu	Method Engineering Manager	Be responsible for organizing establishment of the process documents and process plans used in the production; be responsible for organizing the technical guidance and support of the production process in the manufacturing process; organize the planning of some relevant work of adjustment of the process layout on the project site, expansion and reconstruction of the plant building.	China	In charge of the assembly facility and equipment sources, and examination of production capability human rescues, and organizing the instruction, supporting, and inspection work for technology.
Ms. Ying Sun	Methods Engineering Manager	Be responsible for establishment of process documents and guidance of the process methods of vehicle assembly; assist training manager in assembly technical training.	USA	Clarify the process standard, and instruct assembly processes.
Mr. Yongsheng Li	RAMS Management Engineer	Be responsible for overall RAMS management; analyze the RAMS demands, collect the RAMS original data and provide the data analysis report.	China	To provide the data for improving the stability and reliability.

Name	Title	Responsibilities	Location	Decision Making Authority
Mr. Huaikai Sun	Procurement Manager	Be responsible for purchase, of purchase contract signing, material preparation as per demand, and claims for compensation to the suppliers under the on-site project.	China	To implement material purchasing work based on overall schedule, and coordinate material delivery based on production demand.
Mr. John Hynes	Field Support Engineer	Be responsible for organization and coordination of the relevant work during the quality assurance service after sales of the vehicles; be responsible for solve the problem existing during servicing; be responsible for summary, analysis and feedback of the after-sale service information and presenting the product rectification proposal.	USA	To supervise and control the vehicle after-sale warranty service, make the vehicle operation security proposal, guarantee vehicle safety and reliable operation.
TBD	Production Manager	Responsible for the assignment of all skilled labor and issuing of required tools to perform all manual work on the vehicles. Manage the overall production activities with close attention to the delivery schedule to ensure on-time delivery of the vehicles.	USA	In charge of general production organization and holding regular production meeting, and implementation of production schedule
Mr. Xianbo Chen	Production Manager	Produce, organize, plan, and implement daily manufacturing plan, to ensure on-time delivery.	China	In charge of general production organization and holding regular production meeting, and implementation of production schedule
Mr. Guorui Zhai	Test & Commissioning Manager	Be responsible for all testing and commissioning activities necessary to achieve vehicle acceptance by the MBTA	USA	Decision making that affect testing & commissioning
Mr. Wei Wang	Test Engineer	Be responsible for establishment of commissioning process flow in CRC; be responsible for organizing the static and dynamic commissioning.	China	Be responsible for commissioning



Name	Title	Responsibilities	Location	Decision Making Authority
TBD	M/WBE Liaison Officer	As the single point liaison, responsible for all interfaces with the minority firms and the transit authority. Activities include but not limited to the following: prepare reports for payment to minority firms; review purchase orders; establish and maintain contract and subcontract award records; attend business opportunity workshops, seminars and trade fares related to minority involvement	USA	In charge of decisions directly related to M/WBE activities at all levels.

## 1.2 STATEMENT OF UNDERSTANDING

Below is the RFP requirement for the Statement of Understanding, and CNR's commitment of compliance.

Tab I.1 (b) Statement of Understanding
<i>Provide a statement that confirms that the Offeror fully understands and will adhere to the requirements of the technical specification and all design and manufacturing standards referenced or otherwise applicable.</i>

CNR confirms that it fully understands and will adhere to the requirements of the technical specification and all design and manufacturing standards referenced or otherwise applicable.

## 1.3 CNR'S STAINLESS STEEL CARBODY EXPERIENCE AND EXPERIENCE OF SUBCONTRACTORS

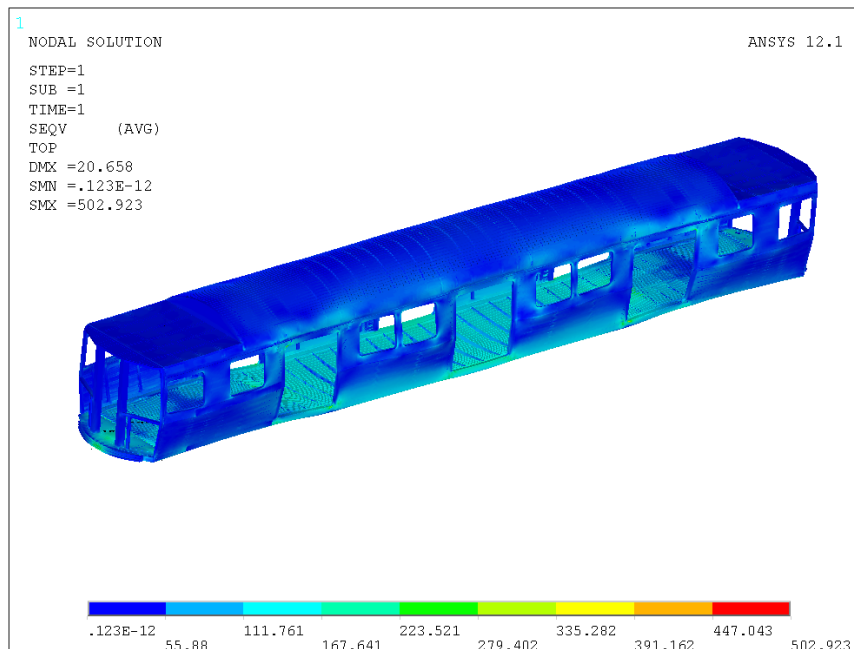
Below is the RFP requirement for the experience with stainless steel carbody manufacturing, and subcontractor history information:

Tab I.1 (c) Experience with Design and Manufacturing of Stainless Steel Carbodies for Heavy Rail Transit Vehicles
<i>Indicate the Offeror's experience with the design and manufacture of stainless steel carbodies for heavy rail transit vehicles, with emphasis on North American projects. To do this, provide a matrix that includes: the transit property; number of cars; date of contract; and carbody manufacturer (in-house or sub-contractor).</i>
<i>Identify the potential subcontractor(s) for the Propulsion, Trucks and Major Truck Components, Auxiliary Power, Low Voltage DC Power, HVAC, Carbody, Couplers / Draft Gear, Wheel Sets, Air Brake Equipment and Controls, Cab Signal Equipment, Door Systems, Seats, Vehicle Monitoring System, Network Equipment and Integrator, Communications Equipment including LED and LCD Signage, Lighting. Identify the type of equipment being considered and where and in what quantities similar equipment is in use. Indicate where this equipment will be manufactured and assembled. The Authority places special emphasis on the use of equipment that is service proven in a similar application in the North American market.</i>

### 1.3.1 Experience with stainless steel carbody

The stainless steel carbodies to be provided by CNR will be manufactured in Changchun, China. CNR began developing stainless steel transit vehicle designs in 1987. With the delivery of 116 stainless steel vehicles to Tianjin Binhai Metro in 2002, CNR became the first Chinese manufacturer to successfully deliver lightweight stainless steel heavy rail vehicles. CNR then went on to deliver 192 stainless steel vehicles for Beijing Metro Line 5 in 2005, a project that proved the maturity of CNR's research, design and manufacturing processes. Since 2005, CNR's manufacturing processes have been developed and refined even further, allowing CNR to become a world-class rail vehicle manufacturer able to compete in the world marketplace. In the past 10 years, CNR has produced over 3000 stainless steel carbodies, as shown in "Stainless Steel Projects" table located at the end of this section.

CNR has continued to advance stainless steel vehicle manufacturing techniques and designs by setting up a dedicated stainless steel carbody research and development platform and manufacturing base. Currently, more than 200 experienced CNR engineers specialize in heavy rail transit design development. CNR uses advanced software, such as Catia 3-D design software, an integrated Virtual Product Management (VPM)/SAP system and ANSYS for Finite Element Analysis (FEA), to provide the best and most efficient designs to their customers. CNR has successfully performed FEA analyses on past projects having similar requirements as in Section T 3.05.03 I of the technical specification.



#### Finite Element Analysis of Complete Car

Following FEA, the complete carbody structure is physically tested to validate the finite element model of the car and the FEA, and to confirm that the structural strength of the carbody fully meets the customer's requirements.



### **Static Testing of Carbody structure**

CNR spot welds 90% of the stainless steel components on the carbody in order to provide lightweight vehicles. To ensure that the spot welds transfer operating and emergency loads, CNR has created exacting stainless steel spot welding procedures and has performed FEAs on the carbody structures and has validated the analyses via physical tests. The low heat generated during the spot welding process reduces carbody deformation and ensures that the skin panels remain flat and aesthetically pleasing.



### **Spot Welding Jig for Stainless Steel Sideframe Panels**





### **Spot Welded Stainless Steel Carbody**

Laser welding has recently been incorporated into many heavy rail carbody designs. CNR has thoroughly researched laser welding designs and processes, and has substituted laser welding for spot welding on carbody kin panels. CNR has used FEA to compare the strength of spot welded structures with laser welded structures, and the results of the analysis show that laser welding provides superior structural and fatigue strength, and preserves skin flatness while eliminating spot welding discoloration on the exterior of the vehicle.



### **Laser Welded Stainless Steel Carbody**

The table below shows CNR's previous contracts for stainless steel heavy rail vehicles, for which CNR has specifically manufactured the carbody structure.



### Stainless Steel Projects

No	Transit Agency	Contract Award	Car Quantity
1	Beijing Metro Line 5	2005	192
2	Shenyang Metro Line 1#	2006	138
3	Australia Double-Deck Stainless Steel EMU Project	2006	624
4	Bangkok BTS Metro Project	2007	48
5	Hong Kong Metro West Island Line	2008	120
6	Shenzhen Metro Line 3, New Procurement	2009	114
7	Brazil Rio de Janeiro Metro 1A	2009	114
8	Beijing Metro Line 9	2009	144
9	Beijing Metro Line 10 Phase II	2009	258
10	Beijing Metro 15#	2009	180
11	Beijing Yizhuang Line	2009	138
12	Chongqing Rail Transit Line 1	2009	174
13	Brazil EMU Project	2009	120
14	Chongqing Rail Transit Line 6	2010	126
15	Beijing Metro 6#	2011	384
16	Beijing Metro Line 5 New Procurement	2011	132
17	Hong Kong MTR South Island Project	2011	30
18	Beijing Metro 14#	2012	228
Total			3264

### 1.3.2 Potential Suppliers and Experience Matrix

System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
Auxiliary Power Supply System	Auxiliary Power Supply; Low Voltage DC Power	Mitsubishi Electric Power Products, Inc.	Freedom, PA, USA	SEPTA	120 cars
				NYCT	300 cars
				BART	410 cars
		TOYO DENKI USA, Inc.	Freedom, PA, USA	WMATA	364
				MNR	162
				NYCT	2
	Battery	Saft America Inc.	Valdosta, GA, USA	NYCT	15
				HRT	13
				SFMTA	151
				NYCT	618
Cab Signaling Equipment	Automatic Train Protection; Automatic Station Identification	Alstom Signaling, Inc.	Rochester, NY, USA	NYCT	460
				MNR	190
				SEPTA	118
				UTA	20
				PATCO	60
				Seoul, South Korea	14
		ANSALDO STS USA, Inc.	Batesburg, SC, USA	NJT	99
				NJT	33

System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
				LACMTA	52
				LIRR	418
				PAAC	83
				LACMTA	50
				Sound Transit	31
				NJT	42
				CATS	20
				ARRC	68
				NJT	10
				STM	144
				LACMTA	78
				WMATA	32
				Montreal STM	104
				HART	68
Carbody		CNR Changchun Railway Vehicles Co., Ltd.	Changchun, China	Chongqing, China	126
				Beijing, China	384
				Beijing, China	132
				Hong Kong MTR	30
				Beijing, China	228
Communication Equipment	PIS, PA, PEI, CCTV (Option V)	RL Control LLC / ISC Applied Systems	Eden Prairie, Minnesota, USA	DART	2
	PIS,PA, PEI, CCTV (Option V), WiFi, Infotainment, Network			MDT	138
	ICCU for VHF and UHF radio systems			GO Transit	157
	Communication System including interoperability with existing Amtrak fleet			Caltrans	130
	Analog PA/IC + PEI equipment including new equipment designs			GO Transit	60
	Analog PA/IC + PEI equipment			GO Transit	25
	Digital Passenger Information System (PIS) & video surveillance,			SACRT	21
	Digital Passenger Information System (PIS)			TRIMET	18
				VRE	8
				METRO	19
Communication Equipment	Digital Passenger Information System (PIS) & video surveillance, wireless communications	RL Control LLC / ISC Applied Systems	Eden Prairie, Minnesota, USA	METROLINX	18
	Digital Passenger Information System (PIS) & video			SMART	12
				PATCO	120

System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
Communication Equipment	surveillance, infotainment, wireless communications				
	Upgrade of the communications control panel in support of UHF radio upgrade			WMATA	1000
	Digital Passenger Information System (PIS) for new and existing LRV fleet			SDMTS	109
	Control Amplifier	TOA Communication Systems	NJ, USA	MBTA	80+
	Control Amplifier with GPS function		NJ, USA and Japan	SCRRA and SFRTA	141+
	LED sign		NJ, NY, and Japan	MBTA, SCRRA and SFRTA	800+
	Automatic Announcement System Unit		Japan	India, Hong Kong MTR, Singapore, Turkey, Greece, China, Japan	900+
	Passenger Emergency Intercom		Japan and NJ, USA	MBTA, SCRRA, NYCT, India, Hong Kong MTR, Singapore, Turkey, Greece, China, Japan	4500+
	LCD Monitor (Option VIII)		Japan	India and Greece	1000 +
	Main Communication Unit		NJ, USA	NYCT	50+
	Interior Speaker		Japan, Indonesia, USA	USA, India, Hong Kong MTR, Singapore, Turkey, Greece, China, Japan	10000+
	Interior Camera (Option V)		Japan and USA	NYCT, SCRRA, India	250+
Composite Flooring	Abrastop/Foam Lite	Baultar Concept, Inc.	Windsor, Quebec, Canada	Montreal STM	468
	Abrastop/Foam			CSX	200+
	Abrastop/Foam			METRA	104
	Abrastop/Foam & Abrastop/Fibre			Amtrak	21
	Abrastop/Foam			RTD Denver	12+
	Abrastop/Foam			SNCF	344
Coupler and Draft Gear		Wabtec Passenger Transit	Duncan, SC, USA	BART	80
				CTA	706
				LACMTA	74
				MARTA	100
				NYCT	1030
				NYCT	600
				NYCT	212

System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
Door System	Includes Door Open Pushbuttons int/ext (Option VII)	Ellcon National Inc. (Faiveley Transport)	Greenville, SC, USA	NYCT	1662
				NJT/NYCT	350+
				Toronto TTC	216
				Toronto TTC	156
				Montreal STM	2808
				NJT	800
				SEPTA	720
				AMT	1200
				NJT	770
				NJT	3000
				NJT	1800
				SEPTA	2600
				WMATA	8000
		Vapor Stone Rail Systems	Duncan, SC, USA	NYCT	12,360
				NYCT	7,200
				NYCT	3,392
				NCYT	16,032
				LIRR	2,824
				PATH	4,200
				CTA	706
				MNR	405
	Gap Mitigation Device (Option VI)		Plattsburgh, NY, USA	MBTA	200
	Door Open Pushbuttons int/ext (Option VII)			NYCT	46,000+
Friction Brake System		Wabtec Passenger Transit	Duncan, SC, USA	CTA	80
				CTA	706
				LACMTA	74
				MARTA	100
				NYCT	1030
				NYCT	600
				NYCT	212
		Ellcon National Inc. (Faiveley Transport)	Greenville, SC, USA	NYCT	6
				SNCF	150
				NS (Netherlands)	130
HVAC		Ellcon National Inc. (Faiveley Transport)	Greenville, SC, USA	Grenoble, France	100
				MARTA	58
				NYCT	28
				SFMTA	64
		Mitsubishi Electric Power Products, Inc.	Freedom, PA, USA	RTCSNV	32
				MNR	405 cars
				NJT	95 cars
				Montreal AMT	160 cars
				NYCT	126 cars



System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
				NJT	100 cars
				Maryland MTA	54 cars
				NYCT	600
				NYCT	212
Lighting		LECIP Inc.	Hornell, NY, USA	Caltrans	Unavail.
				SEPTA	Unavail.
				Amtrak	Unavail.
		TDG Transit Design Group, Inc.	Niagara Falls, NY, USA	Sound Transit	9 cars
				SunRail	22 cars
				SEPTA	250 cars
				Mn/DOT	18 cars
				UTA	18 cars
				Amtrak	36 cars
Propulsion System	Traction Motor, Propulsion Inverter Box, Gear Unit, Switch Box	Mitsubishi Electric Power Products, Inc.	Itami, Japan And Freedom, PA, USA	LIRR	836
				MNR	336
				MNR/CDOT	380
				SEPTA	120
				MDT	28
				WMATA	29
	Traction Motor, Propulsion Inverter Box, Gear Unit, Switch Box	Toyo Denki USA, Inc.	Freedom, PA, USA	DART	20
				DART	48
Seating		Freedman Seating Company	Augusta Blvd, Chicago, IL 60651.	Rocky Mountaineer	2 trains
				Amtrak	140 trains
				Sun Tran	8 trains
				ODOT	2 trains
				TriMet	6 trains
				SEPTA	26 trains
				GCRTA	34 trains
				MVTA	27 trains
				METRA	298 trains
				STA	33 trains
				WMATA	50 trains
				TriMet	27 trains
				Port Authority	82 trains
		Kustom Seating	Bellwood, IL, USA	DART	259 car sets
				WMATA	428 car sets
				METRO	38 car sets
				MVTA	59 car sets
				TriMet	18 car sets
				CATS	26 car sets
Training		FAAC, Incorporated	Royal Oak, MI	NYCT	1

System / Equipment	Type of Equipment	Supplier	Facility Location	Where Used	Quantity
Simulator (Option XI)				Metropolitan Transit Authority - Houston Rail	1
		SIMUTECH INTERNATIONAL CO., LTD	Beijing, China	Beijing Metro ; China DaLian MTRC; Dalian Modern Rail Transit Co. China Beijing Vocational College of Transportation; CNR Changchun Railway Vehicles Co., Ltd	30
Trucks	Gallary Car Truck	Bradken, Inc.	Atchison , Kansas, USA	Metra	554
				Metra	26
				Metra	600
				VRE	20+
				BART	500
				BART	160
				WMATA	600
				WMATA	384
				WMATA	368
				MARTA	200
	MARTA			10	
	Bi-level			Go Transit, Tri-Rail	1098
				SCRRA, Coaster, West Cost Express, ACE, Sounder, Trinity Railway Express, Caltran	1082
				UTA	322
				TorontoTTC	932
				TorontoTTC	18
				Unavail.	77,381
				Unavail.	16,561
				METRA	142
				Unavail.	20
Vehicle Monitoring System		Includes Network Equipment and Integrator	Mitsubishi Electric Power Products, Inc.	Freedom, PA, USA	MNR
	Includes Network Equipment and Integrator	Toyo Denki Seizo K.K.	Yokohama, Japan	Beijing, China	100+
Wheelsets	Wheels, Axles, Journal Bearings and Housing	UTCRA, Inc	Morton, PA, USA	SCRRA	644
				SEPTA	500
				RTD Denver	200
				Amtrak	520
				AMARTA	960

## 1.4 PROPOSED TRUCKS

Below is the RFP requirement for the proposed trucks:

Tab I.1 (d) Proposed Trucks

*Describe the proposed trucks for this contract. Include such information as, but not limited to, structural material description, suspension (primary or secondary) description, allowable static and dynamic movement, and fully assembled weight. Provide a listing of the past experience of the basic design of the proposed trucks. Indicate where the major truck structural components will be manufactured (cast or fabricated) and where the trucks will be assembled.*

### 1.4.1 Technical Approach

CNR, along with Bradken (formerly Atchison Castings) are proposing a cast truck design utilizing the expertise and service proven history of Bradken trucks within North America. After a thorough evaluation of capable North American truck suppliers, CNR selected Bradken as the strongest partner. Bradken as a company can both design and manufacture trucks for their clients. They aren't dependent upon an inflexible design being used to satisfy a service proven design instead they can focus on the needs of current vehicle designs to provide the best solution utilizing the experience they have gained as a leading North American truck supplier.

Bradken has designed and manufactured over 5,000 railway passenger trucks since 1961 and more than 90,000 locomotive trucks since 1936. These trucks have provided millions of miles of safe and highly reliable service for the many long distance and commuter rail passengers in North America.

Bi-Level trucks have been provided for Metrolink (SCRRA), Sounder (Seattle), Coaster (San Diego), Trinity Railway Express (Dallas Fort Worth), Altamont Commuter Express (ACE), SFRTA (formerly Tri-Rail), GO Transit, and several others.

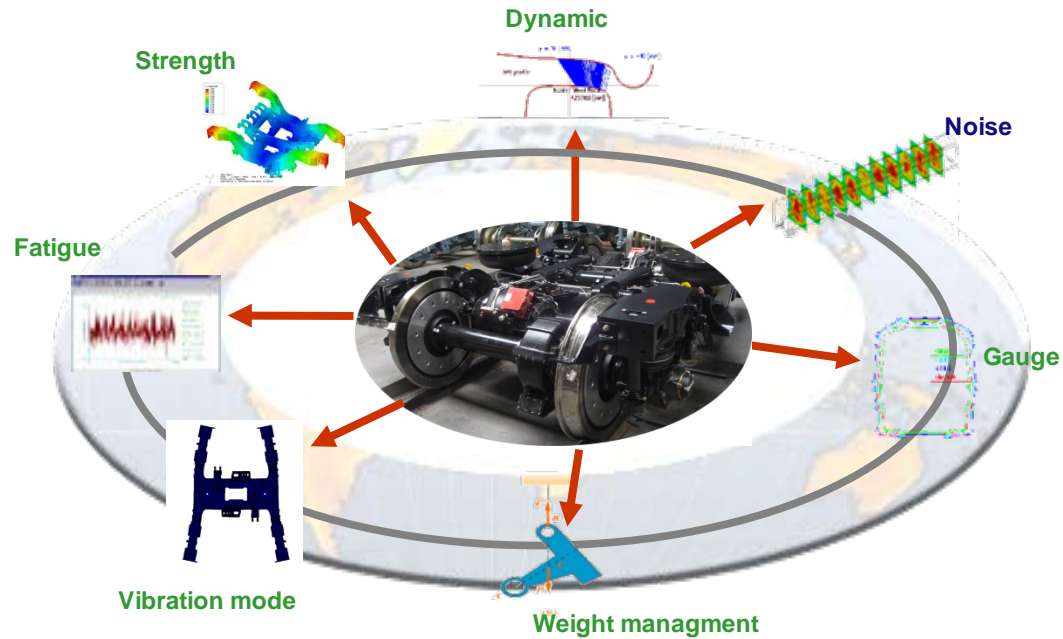
For the transit industry, Bradken has provided trucks for Toronto (TTC), Washington (WMATA), San Francisco (BART) and Atlanta (MARTA). It is the TTC truck that CNR focused on for their MBTA design. The TTC truck has inboard journals and the same axle center distance as the MBTA. This truck had been in service for 37 years and will soon be having a second life in Lagos, Nigeria. This kind of service dependability, along with the fact that these trucks will be reconditioned for an expected 20 years of additional service, provided CNR the confidence that Bradken trucks can withstand the rugged service environment of the MBTA heavy rail vehicles.

CNR has a large truck design engineering team of more than 70 engineers and has been designing and fabricating trucks since 1954. This design team has extensive truck experience from lower speed LRVs to high-speed intercity cars. These cars include trucks for LRVs, EMUs including subway cars for speeds of 50-125 mph (80-200 km/hr), and intercity high speed trucks for 236 mph (380 km/hr) cars. Based on this extensive experience CNR is confident in being able to complete the design and integrate the total truck assembly.

In addition, CNR has extensive truck production experience and fabricates up to 6,000 trucks per year.

CNR's truck design capabilities include CAD or CATIA, and classical/finite element stress analysis using ANSYS, dynamic performance analysis using SIMPACK or VAMPIRE. CNR's Advance Technology Test Center provides static and fatigue testing for truck structural elements, and can also provide dynamic performance simulation tests of a complete car including trucks.

Below are figures showing CNR's simulation and analysis platform, truck static and fatigue strength test and the roller rig where a complete car including trucks can be dynamically tested. Note while CNR is indicating their overall testing capabilities, for this particular design, the truck static and fatigue testing will be performed by Bradken utilizing a company in the US that Bradken has used in the past for their designs. CNR will provide oversight of these tests.



### CNR's Simulation and Analysis Platform

CNR has successfully designed dozens of trucks which have passed both static and fatigue tests.



**Truck Frame Static and Fatigue Strength Test**





**Vehicle Roller Rig Test**

## **1.4.2 Technical Description**

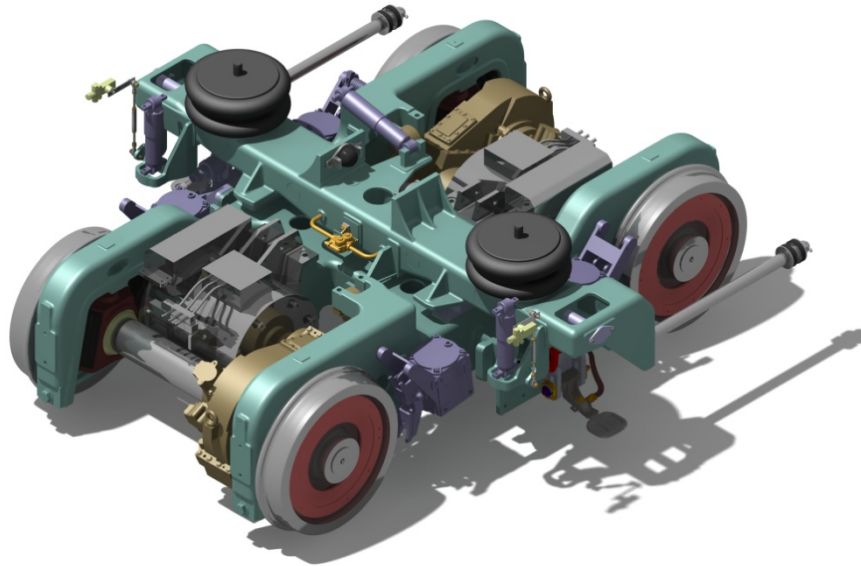
### **1.4.2.1 General Description**

The truck is inboard bearing with widely spaced bolster air springs, and is designed for stringent North American operations in accordance with the MBTA Technical Provisions as well as the applicable FRA, APTA, and AAR standards.

The truck utilizes a conventional rigid 'H' type frame. Two air springs per truck are used to support the carbody and to provide the required ride comfort. The primary suspension consists of chevron springs. The truck is designed with two motors per truck (one per axle). The traction motors are mounted to the frame and are therefore fully suspended. The gearbox is double reduction with a flexible coupling

g. Besides the electrodynamic braking system using the traction motors, the trucks are equipped with pneumatically operated wheel tread brake units.

For the truck general arrangement drawing, see Section 1.13 of this proposal. The 3D concept of the complete truck assembly is shown below:



### **3D Concept of No.2 Truck Assembly**

These trucks will use many standard parts and interfaces to carry out reliability evaluation on each part and to optimize the truck in accordance with the principle of reducing whole life cycle cost.

The truck design considers the following special requirements during design:

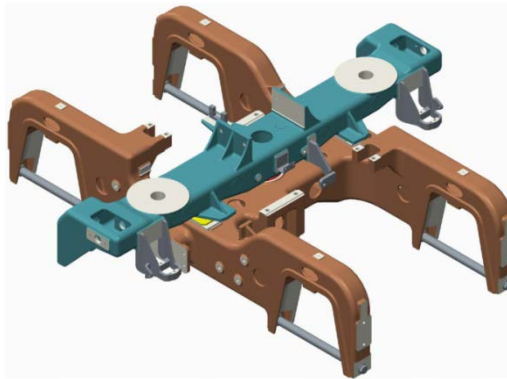
- Inboard bearing design;
- Average Red Line axle load 31,250 lbs (14.2 t), average Orange Line axle load 27,500 lbs (12.5 t);
- Max operating speed 63 mph (101.4 km/hour);
- Maximum design speed 70 mph (113 km/hr);
- Wheel diameter new 28 inches (711.2 mm), worn 25.75 inches (654.05 mm);
- Minimum truck equipment clearance 2.75 inches (69.9 mm) above top of running rail;
- Excellent running stability and comfort;
- Service life of 30 years;
- Reduced maintenance;
- Reduced whole life cycle cost.

#### **1.4.2.2 Truck Frame and Bolster**

The truck frame is a one piece casting, rigid H-frame, which has mounting brackets for equipment such as current collectors, brakes, motors and gearboxes, and has lifting lugs on top of the frame and jacking pads on the underside. The truck frame also has rotational stops as per Section T 11.06.04 C.

The truck bolster is also a one piece casting, and will provide additional air volume for the secondary suspension and serve as an auxiliary reservoir. The interior of the bolster casting will be coated with a permanent anti-corrosion coating.

The 3D concept of the truck frame and bolster is shown below:



### **3D Concept of Truck Frame and Bolster**

Bradken utilizes in-house solidification software Magma as a Foundry Process Engineering tool. This analysis is performed prior to pouring the first samples and utilized further to enhance the design of the casting production.

The bolster will be pressure tested in accordance with ASME pressure vessel requirements. The tests will be performed at 1.5 times the maximum main reservoir pressure prior to being assembled into the truck assembly.

The truck bolster will be attached to the truck frame by means of a locking center pin.

The truck frame castings will be tested for static loading and fatigue loading per Section T 11.09 of the Technical Provisions.

Each truck frame casting is designed to carry a 50,000 lb. centerplate load to accommodate the 125,000 lb. maximum Red Line AW3 car weight.

The truck frame casting is designed to withstand the truck-to-carbody connection requirement of a horizontal load of 150,000 lbs. applied anywhere on the truck frame as per Section T 3.04.01K.3 of the Technical Provisions to protect against truck separation in the event of a derailment.

The truck frame and bolster will be painted in accordance with Section T 18.18.01 of the Technical Provisions.

The structural reliability of trucks with cast steel framing has been proven over many years of service at the MBTA and many other locations throughout North America.

This proposed truck frame and bolster design will have even further improvements in material strength using Bradken's C4 alloy steel; which will enhance its yield strength to 48,000 psi and ultimate tensile strength to 75,000 psi, yet still meeting all of the requirements of AAR M-201 Grade B specification. The AAR specification M-201 Grade indicates the tensile strength of 70,000 psi and the yield strength of 38,000 psi. The Bradken C-4 alloy steel ensures Charpy "V" Notch Impact Test values of 15 ft-lbs. @ -20°F.

A total of 300+ trucks on the Chicago Metra gallery cars and approximately 150+ trucks for Virginia Rail Express (VRE) as well as SCRRA/SFRTA/ROTEM fleet of 292 trucks for California and Miami were manufactured from this improved Bradken's C-4 Steel.

A similar Bradken cast steel truck frame and bolster has been in revenue service operation with the TTC for 37 years.

This design has had superb performance and a project is now underway to refurbish these trucks and corresponding vehicles for a new installation for Lagos, Nigeria's 17-mile (27 km) Blue Line.

#### **1.4.2.3 Primary Suspension**

A pair of chevron springs transmits loads from the truck frame to the axle. Primary chevron springs provide the desired lateral, longitudinal, vertical and yaw stiffness between the truck frame and axle. This kind of suspension allows flexibility in longitudinal, lateral and vertical direction, not only to ensure the required spring deflection of the primary suspension, but also to meet the requirements of flexible positioning of the journal box. At the same time, it has good performance absorbing high frequency vibration and insulating against noise.

Tie bar and bump stops are also incorporated within the primary suspension system to protect against excessive wheelset deflections. The installed tie bar also provides wheel axle retention during lifting.

The stiffness of the chevron springs may vary according to the weights of Red and Orange line cars if necessary, but the interfaces will be kept the same.

The use of chevron springs is a service-proven feature and meets the requirements of Section 11.06.01. Chevron spring vertical stiffness per journal box is 6,270 lbs./in. AW0 to AW3 static spring deflection is approximately 0.78 inches. At AW0 load, the vertical distance to the primary suspension solid stop will be 2.0 inches.

A simulation using either SIMPACK or VAMPIRE and the track data to be obtained within 90 days of contract will be done to determine if this spring rate needs to be revised for either the Red Line and/or the Orange Line trucks. While the static and dynamic movement of the truck meets the requirements of the clearance diagram, CNR will perform detailed calculations of the final car configurations during the detailed design phase to optimize static and dynamic envelop clearances.

#### **1.4.2.4 Secondary Suspension**

The air springs support the carbody weight and provide the vertical, lateral, and rotational suspension stiffness between truck and carbody, which are provided primarily to reduce the vibration and shock and provide good passenger riding comfort while maintaining proper floor height relative to the station platforms. This air spring system also achieves a constant vertical body bounce frequency over its operating range, reducing the effect of dynamic resonance between the truck and the carbody.

The secondary air spring has a progressive rubber bumper located inside, in the event of an air spring failure (loss of air) allowing the car to still run safely.

The air springs are connected to auxiliary air reservoirs in the bolster, which provide an additional air column to soften the vertical stiffness to achieve the required vertical ride comfort.

The lateral rubber bumper stops are provided to limit infrequent excessive lateral movements thereby controlling the displacements for the kinematic envelope.

One secondary lateral hydraulic damper per truck, fitted between the underside of the carbody and the truck bolster, controls lateral body oscillations.

Two secondary vertical hydraulic dampers are fitted in parallel with the air springs. These provide the damping of the vertical oscillations of the carbody.



Three (3) leveling valves (No. 1 truck with a single leveling valve and the No. 2 truck with two leveling valves), per Section T 11.06.03, are used per car to control the air supply to the springs to suit the varying passenger load. The air springs on the No. 2 truck will be connected by means of a differential pressure valve so that the rupture of one spring will deflate the other.

The air spring vertical stiffness at AW0 is 1,990 lbs./in. and at AW3 is 3,420 lbs./in. This spring rate will be verified by dynamic analysis after the track data evaluation. The air gap for secondary suspension motion to contact the progressive internal rubber bumper stop is 1.25 inches. This distance to contact the rubber bumper will be optimized for ride quality so it will not be contacted during normal vehicle operation.

The traction and braking forces are transferred between the carbody and bolster via two longitudinal bolster anchors. The bolster anchors are forged with resilient rubber bushings at each end.

In the proposed design, the vertical load is supported by non-metallic side bearings on the truck frame. The side bearing frictional resistance is carefully calculated to provide the correct amount of torsional damping to control truck hunting at high operating speeds. No lubrication or maintenance is required.

Reduction in vehicle height due to wheel wear can be restored by packing shims under the loaded side bearing assembly. The shims will be arranged so they will not come loose. The height adjustment arrangement will be submitted to the Authority during design review.

#### **1.4.2.5 Wheelsets**

Each truck has two wheel sets. Each wheelset contains wheels with noise reduction dampers, axle, journal bearing housings, journal bearings, gear box and grounding rings. Wheels are forged AAR M-107 Grade B steel structure. The axle is in accordance with AAR M - 101 Grade F and designed for a minimum fatigue life of 40 years. The bearing housing is a whole cast structure. The journal bearings are 6x11 Class E self-sealed tapered roller bearing with double row, and will have an L-10 life  $\geq 1,500,000$  miles (2,414,016 km). The inspection interval for the journal bearing will not be less than 300,000 miles (482,803 km). Each journal housing will be drilled to enable installation of an over-temperature sensor. CNR will make every effort to reduce the unsprung mass of the truck and therefore minimize impact forces to the rail. CNR is currently investigating the use of hollow axles to reduce the unsprung mass and overall vehicle weight.

#### **1.4.2.6 Braking System**

All trucks are fitted with tread brake units at all four wheel positions. The tread brakes will be mounted directly to the truck side frame with bolts. Each brake unit will be fitted with a brake shoe. The brake shoe will be secured to the brake unit by an easily removable brake key. The tread brake units containing the parking brake feature will be located on the No. 1 truck. The parking brake will be spring applied air released and have a backup mechanical release. The No. 1 truck of each car also has trip cocks, one on each side.

#### **1.4.2.7 Traction Equipment**

The truck is designed with two motors and gear units per truck in compliance with the requirements of Section T 11.04. Each axle of the truck is driven by a traction motor which is hung on the frame and arranged in parallel with the axle. A double reduction gearbox will be provided and have one end supported by the axle and the other end hung on the frame by resilient rubber

mounts. Between the traction motor and gear box is a coupling to transfer the torque. In addition, the traction motor and gearbox are also equipped with a ground return device and speed sensor. There will be at least two ground brushes per axle in compliance with Section T 9.03.03 A of the Technical Provisions.

In addition, current collectors will be mounted on each side of each truck. An air-operated sleet scraper will be mounted on each side of the No.1 truck, forward of the current collector.

#### **1.4.2.8 Additional Equipment**

The truck is designed with mounting seats on both ends of the frame, which will be used for installing ATP/ASR Antenna or snow plows, flange lubrication, and other additional equipment.

#### **1.4.2.9 Truck Weight**

It is currently estimated that the (Red Line or Orange Line) No. 1 truck total weight will be approximately 13,700 lbs. (6.2 t) and the No. 2 truck total weight will be approximately 13,200 lbs. (6.0 t).

#### **1.4.2.10 Noise Control Device**

Rubber is used extensively in the lateral bumper stops, bolster anchor connections, hydraulic damper connections along with rubber chevron primary springs and secondary air springs, gearbox, motor mounts, and other items. In addition, the wheels will be equipped with a noise damping arrangement. These components are provided to reduce noise transmission and minimize resonant vibration while in operation.

#### **1.4.2.11 Interchangeability**

The truck can be interchanged between the Red and Orange cars, except perhaps the suspension parameters of truck (the parameters of both the primary springs and air springs) may be different due to the weight variation between the Red and Orange Line cars. Besides the interchangeability between the Red and Orange Line vehicles, there is also interchangeability between the trucks between the No. 1 and No.2 ends on the same car, including the truck frame assembly, bolster assembly, wheel set assembly, journal bearing housing journal bearing, motor, gear box drive device, primary spring, air spring, and other items. The differences between the trucks are the parking brake equipment, trip cock, wheel flange lubrication, automatic train protection/automatic speed regulation (ATP/ASR) antenna, leveling valves and piping. All of the fixed brackets will be located on each truck to make them interchangeable and will only require attachment by bolting.

#### **1.4.2.12 Safety and Dynamic Performance**

##### **1.4.2.12.1 Wheel Load Equalization**

The truck will be designed to meet the wheel load equalization requirements of Section T 11.10.02 of the Technical Provisions. A chevron primary suspension truck design has already demonstrated good equalization characteristics to the MBTA. An analysis to ensure this as well as a test will be done to satisfy this requirement.

##### **1.4.2.12.2 Safety and Stability**

An analysis of the truck will be performed using either SIMPACK or VAMPIRE software to optimize the vehicle dynamic performance (including safety against derailment and high speed stability) and

in order to optimize the proper suspension parameters for the truck if necessary. The key objective in the designing of the truck is selecting the optimum combination of roll stability and vertical and lateral spring flexibility. Usually one of these characteristics is obtained at the expense of the other. However, in this truck configuration, it is possible to obtain a high degree of roll stability by the wide spacing of the air springs while still obtaining a soft secondary suspension system.

The track input will be obtained within 90 days of the contract award. These parameters will be verified by the pilot trainset running test to insure the requirements of Sections T 11.10 and T 11.11 of the Technical Provisions are satisfied.

#### **1.4.2.12.3 Ride Quality**

The ride quality will be in accordance with Sections T 2.02.16 and T 11.10.05. The wide spacing of the secondary air springs provides good roll restraint while allowing a soft vertical suspension spring rate providing enhanced ride quality for the passengers and the vehicle body. The air springs provide a variable spring rate and ensure maintaining a constant frequency for different passenger loads. This results in uniform ride quality throughout the loading range. Vertical and lateral hydraulic dampers control vertical and lateral body oscillations, and make up the remaining elements affecting ride quality.

#### **1.4.3 Application History and Manufactured Location**

The truck frame and bolster are similar to the Bradken H5 and Bi-Level trucks built in 1977 and 1992 respectively.

The axles, journal bearings, primary springs and air springs will be of designs similar to previous Red Line Cars. The wheels will be equipped with a noise damping arrangement based on the Blue Line vehicles.

The locations where the major truck components will be manufactured and assembled are shown in the table below:

Description of Parts	Manufacturing Location	Assembly Location
Truck Frame Assembly	USA	USA
Truck Bolster Assembly	USA	USA
Rubber Chevron Primary Spring	USA or EU	USA
Air Spring Assembly	USA or EU	USA
Lateral Shock Absorber	EU	USA
Vertical Shock Absorber	EU	USA
Bolster Anchor Assembly	USA/EU or China	USA
Wheel with damper	USA	USA
Axle	USA	USA
Journal Bearing	USA or EU	USA
Journal Box	USA or EU	USA
Final Truck Assembly		USA - MA

## 1.5 WEIGHT MANAGEMENT PLAN

Below is the RFP requirement for the proposed trucks:

Tab I.1 (e) Weight Management Plan

*Describe how the absolute weight requirements are met and how the weight is managed during the design phase and during manufacturing. Describe how the Weight Management Plan is coordinated with the various subcontractors.*

CNR's weight management efforts begin during the proposal phase of a project when, based on the weight and balance of the vehicle platform on which the proposed vehicle is based, CNR will confirm the feasibility of the required weight and balance requirements. Should it be necessary to deliver a new vehicle having more restrictive weight and balance limits, CNR will closely evaluate the steps needing to be taken to achieve these limits. Only when CNR is satisfied that the specified weight and balance requirements can be achieved will it commit to deliver the vehicles.

Also during the proposal phase of the project, all suppliers of systems and major pieces of equipment will be required to commit to a maximum weight for their scope of supply. A requirement of all supplier purchase specifications is that each supplier indicates the weight of materials and assemblies on drawings. For heavy equipment, the supplier is also required to identify the center of gravity of the equipment.

CNR is fully aware of the absolute (AW3) weight limitations imposed by Part T 1.04.03 A of the Technical Provisions and Part T 2.01.08 of the Technical Provisions: 110,000 lbs for the Orange Line cars and 125,000 lbs for the Red Line cars. However, it should be noted that CNR only has direct control over the car AW0 weight, the number of passenger seats, and designing the cars such that they will only accommodate 225 passengers on the Orange Line cab cars, 240 passengers on the Orange Line non-cab cars, 270 passengers on the Red Line cab cars and 289 passengers on the Red Line non-cab cars using a standee area of 1.5 ft<sup>2</sup> per passenger. CNR has carried out detailed weight analyses for each of the Red and Orange car types, and has full confidence in meeting MBTA's specified vehicle weight targets.

At the beginning of the design development phase of the project, CNR will generate a Weight and Balance Calculation Sheet for each vehicle type (Orange Line cab car, Orange Line non-cab car, Red Line cab car, Red Line non-cab car) based on the Bills of Materials for the proposed vehicle configurations. Normally, the Weight and Balance Calculation Sheet lists all components entering into the construction of the cars down to the line replaceable unit level, together with the weight of the item and the location of the center of gravity (CG) of each component with respect to the orthogonal axes of the cars. Using this sheet, the total weight of each vehicle is calculated, together with location of the vehicle CG and the resulting longitudinal and lateral imbalance. However, for the MBTA project, CNR will also include passenger weight and distribution for the AW1, AW2 and AW3 loading cases in the calculation.

During the design development stage, the engineering group will lay out the car structure and superimpose on it all systems, subsystems, and major components, such that the required equipment dimensions and clearances are maintained. Components are initially located to follow specification requirements and original equipment manufacturer recommendations, to take into consideration equipment access and equipment maintainability (including frequency of maintenance), the ability to mount the equipment to structural members of adequate strength, as well as past experience with similar vehicles built for other clients. To remain within the vehicle



imbalance limits imposed by Section T 2.01.09 of the Technical Provisions, components are adjusted on their x, y and z axes, as needed, to provide the required overall imbalance, while still meeting the aforementioned location criteria.

As the vehicle design develops and supplier drawings are received, equipment weight values and equipment CGs are entered into the Weight and Balance Calculation Sheet for each car type. Actual weights are used whenever possible, including weights obtained at first article inspection, source inspection, or other means.

As-built drawings are distributed to Receiving Inspection, and when material arrives, the first sample of each component or assembly is weighed on a calibrated scale to confirm compliance with the suppliers' estimates. As an alternative, suppliers may provide certified weights. The actual material weights are recorded by Quality Control personnel and provided to the Engineering Department, which then refines the weight estimate for the complete vehicle. Should there be any significant departure from the estimated weight, a mitigation plan will be implemented, and equipment will be redesigned or relocated in order to meet the required parameters. Underweight as well as overweight differences are accounted for so that car balancing is closely regulated.

Strategies used to manage weight and weight distribution first include the specification of lightweight materials and designs for all components, and then working with suppliers to modify their designs should weight become a factor. Other key strategies include maintaining close tolerances on the location of heavy underfloor- and roof-mounted equipment from the centerline of the car; reorienting components to change the CG location; and the redesign of equipment to reduce weight and to modify CG locations. The actual component weights derived from the assembly of the first cars will allow for one final adjustment.

As required by Section T 3.04.10 A of the Technical Provisions, CNR will provide regular weight estimates of the carbody throughout the design process, and carbody weight records will be included in each car's Car History Book.

Within 60 days after NTP, CNR will submit monthly weight reports to the MBTA, as required by Section T 2.01.07 B of the Technical Provisions. The weight reports will be detailed to the line replaceable unit level and will include weight targets for new systems and any weight reduction measures currently underway.

Each production car will be weighed on a calibrated scale, recording the car weight individually at both ends and under each axle. A weight ticket recording these values, plus the combined total car weight, will be provided for each vehicle and will be placed in the car manufacturing history book delivered with each vehicle. Should weights for the same type of vehicle produced vary by more than 300 pounds, the cause will be investigated.

Below is the summary weight estimate table for both car types on the Orange and Red lines.

		Orange Line		Red Line	
		Cab car	Non-cab car	Cab car	Non-cab car
No.	Assembly	Weight	Weight	Weight	Weight
1	Carbody	15,874	15,874	20,283	20,283
2	Interior Arrangement	7,417	7,860	9,418	9,480
3	Doors and windows	4,172	4,398	5,451	5,677
4	Electrical above floor	1,642	1,895	1,828	2,045

		Orange Line		Red Line	
		Cab car	Non-cab car	Cab car	Non-cab car
5	Electrical under floor	6,989	6,989	6,989	6,989
6	Brakes	2,017	1,363	2,017	1,363
7	HVAC	5,077	5,011	5,122	5,055
8	Coupler and Draft Gear	1,874	1,874	1,874	1,874
9	Truck	26,900	26,900	26,900	26,900
10	Cab Electrical Equipment	1,245	-	1,356	-
11	Cab Mechanical Equipment	1,421	-	1,421	-
12	Underframe Thermal and Sound Insulation	441	441	441	441
	Σ (AW0)	75,070	72,605	83,100	80,108
	Σ (AW3)	109,945	109,805	124,950	124,903
	Requirements in T 2.01.08				
	Σ (AW0)	75,125	72,800	83,150	80,205
	Σ (AW3)	110,000	110,000	125,000	125,000

## 1.6 VEHICLE SAFETY

Below is the RFP requirement for the details pertaining to the safety designed into the systems and the vehicle as a whole:

Tab I.1 (f) Vehicle Safety
<i>Describe how Safety of the vehicles is ensured, and what methods are applied to verify and certify the safety of all subsystems and the vehicle as a whole.</i>

While there exist established protocols and design methodologies to ensure that safety features are integrated into system design characteristics to prevent operation of the vehicle except in a safe manner, CNR believes it is necessary that the entire organization be imbued with a sense of safety awareness, such that it becomes second nature to ensure that the operating environment, the riding public and equipment are not subject to events which could result in injury to personnel or damage to the equipment.

CNR's general approach is to use both CNR's staff and the equipment suppliers' knowledge to identify potential hazards and to initiate the necessary actions to prevent, minimize, or control these hazards. It is also necessary, of course, to work closely with the end user to ensure that the vehicles provided interface correctly with the transit system and can be easily used by the riding public.

As required by Section T 2.06.01 A of the Technical Provisions, CNR will provide MBTA, prior to conditional acceptance by the Authority, with a comprehensive safety certification (CDRL 02-21) that all known hazards associated with the vehicle have been mitigated to an agreed risk and Mean Time Between Hazardous Events. As part of this, and as required by Section T 2.06.01 B of the

Technical Provisions, CNR will develop a Safety Certification Plan (CDRL 02-26) detailing how safety certification of each sub-system and the vehicle as a whole will be achieved.

As part of this same process, and as required by Section T 2.06.01 C 1a, CNR will develop a System Safety Program Plan (CDRL 02-17) detailing how all hazards related to the vehicle will be identified categorized, mitigated, tracked, and closed. Within 60 days of Notice to Proceed, as required by Section T 2.06.01 C 2a of the Technical Provisions, CNR will provide MBTA with an initial Hazard List for approval that identifies all potential hazards associated with the vehicle, including those caused by mechanical failures, electrical/electronic component failures, software errors or defects, environmental impacts, human error, maintenance, and operational conditions.

Following approval of the initial Hazard List, CNR will then submit a Preliminary Hazard Analysis (CDRL 02-23) as required Section T 2.06.01 C 3a of the Technical Provisions. The analysis will define the potential cause of the hazards, the probability of the hazards, the severity of the hazards, the potential or proposed mitigation and the residual probability and severity of the hazards.

In accordance with Section T 2.06.01 C 4a of the Technical Provisions, following approval of the Preliminary Hazard Analysis, CNR will develop and submit to the MBTA for approval a Hazard Tracking Log (CDRL 02-24), which will be used to track the status of all supporting documentation for each of the logged hazards. This log will be regularly updated and will be submitted to the MBTA for review on a monthly basis. CNR fully understands that all hazards in the Hazard Tracking Log must be closed before the MBTA is able to issue a Safety Certification.

As part of the safety analysis process, CNR will carry out comprehensive Failure Modes, Effects and Criticality Analyses (FMECA) for all safety related components, as defined in Section T 2.06.01 C 5a of the Technical Provisions. In addition, CNR will carry out a Fault Tree Analysis (FTA) as required by Section T 2.06.01 C 6a of the Technical Provisions. As required by Section T 2.06.01 C 7a of the Technical Provisions, CNR will submit a subsystem hazard analysis for each vehicle subsystem, including subsystem Hazard Tracking log, FMECA, and FTA. These will be submitted as part of the Preliminary Design Review and the Final Design Review submittals.

For individual component failures rates used in the safety analyses, CNR will use published failure rates or values for ground mobile equipment published in MIL-HDBK-217F. Unless certified information is available, software failure probability rates used in the safety analyses will be assumed to have a Safety Integrity Level of zero as defined by EN 50128.

All non-metallic elements used in the construction of the vehicles will be required to meet the requirements of NFPA 130, 49 CFR Part 238, and BSS 7239, as required by Section T 2.06.02 of the Technical Provisions. Also, the car floor assembly will be designed to resist a 30-minute fire test in accordance with ASTM E-119, NFPA 130, and 49 CFR Part 238. As required by Section T 2.06.02 D of the Technical Provisions, smoke detectors will be installed in each fresh/return air mixing plenum and supply duct, and automatic dampers shall close to prevent external smoke from entering the vehicle.

CNR will also work closely with the MBTA to ensure that the vehicles are as blast-resistant as feasible, as required by Section T 2.06.03 of the Technical Provisions.

Electrical systems and subsystems of the vehicles will be designed and tested to meet the electrical interference requirements of Section T 2.07 of the Technical Provisions. Sub-suppliers' systems will be required to meet specific electromagnetic interference and compatibility requirements, such that when the systems are installed on the cars and running on the MBTA's property, the vehicles as a whole will not interfere with any wayside equipment, MBTA on-board radio equipment, or passenger equipment, such as personal electronic devices or medical equipment. CNR realizes that,

in addition to sub-systems meeting specified requirements, careful attention will be paid to how the equipment is installed on the vehicles to minimize interference and to maximize compatibility. This will be achieved by integrating signal-to-noise levels, transmitter frequencies, filtering, inverter pulse frequencies, the location of emission sources, the separation of power and signal wire and cables, wire and cable shielding, wire and cable terminations, the filtering of inductive loads, and other factors.

Considerations for passenger safety will include, as a minimum:

- Designing the interior of the vehicles and areas that passengers might come into contact with to minimize sharp edges or protuberances.
- Designing heater guards to ensure that metallic objects pushed through the ventilation openings cannot contact heater element terminals.
- Designing the locations of stanchions, grab rails and handholds to maximize their availability to standees.
- Ensuring that tripping hazards are eliminated. This will include the optimization of the coefficient of friction of the floor covering to ensure it is not too slippery when wet, but does not cause excess grip when dry.

Considerations for safety of maintenance staff will include, as a minimum:

- Minimizing sharp edges on vehicle structure and equipment enclosures.
- Ensuring that the existence of high voltage equipment is suitably highlighted.
- Ensuring that electrical equipment enclosures are grounded, including their covers.
- Wherever possible, mounting terminal blocks vertically to prevent dropped foreign objects from bridging terminals.
- Incorporating drip loops into cable connections to minimize the ingress of water into equipment enclosures.
- Ensuring that equipment is as easily maintainable with the minimum of special tools as feasible.

## **1.7 PERFORMANCE SIMULATION / SUMMARY DUTY CYCLE ANALYSIS**

Below is the RFP requirement for the performance simulation and summary duty cycle analysis:

<b>Tab I.1 (g) Performance Simulation and Summary Duty Cycle Analysis</b>
<i>Using the provided track charts, provide a performance simulation and summary duty cycle analysis.</i>

### **1.7.1 Introduction**

In the process of soliciting technical and commercial proposals from potential propulsion system suppliers, CNR requested that preliminary performance simulations be provided as part of each supplier's technical proposal. CNR reviewed the proposals and all were similar in the information provided. That information was used to develop the initial simulation and analysis presentation in this document.



### **1.7.2 General**

Because identical propulsion systems are to be used for both the Red Line and Orange Line vehicles and because the performance simulations for both the Red and Orange lines show that the Red Line conditions are somewhat more severe than that of the Orange Line, this document mainly addresses the propulsion system performance for the Red Line vehicle. Refer to Section 1.7.5, Analysis, for a general Red/Orange Line comparison.

The simulations are based on the route profile information contained in the nine sheets from drawings 39106 and 39107 located in Appendix II of the Red and Orange Line New Vehicle Procurement Technical Provisions, document VE-10-036 dated October 22, 2013 including Addenda 1 through 10. CNR wishes to point out that the provided Red Line and Orange Line route profiles are missing much distance/speed limit data and some grade data. For the purposes of the simulations, that data was created by measuring/scaling off the route profiles. CNR believes that this created data is sufficiently accurate for initial performance analyses.

Since the Technical Provisions state that the successful contractor “Within 90 days of Notice to Proceed (NTP), the Contractor shall set up and instrument a geometry car and perform a track geometry test of the entire Red and Orange Line (including yards) to verify and update the data used in the simulations.” (Reference CDRL 11-13, Track Geometry), CNR recognizes that, based on the results from the track geometry testing, future adjustments may need to be made to the performance simulations. CNR does believe, however, that the performed simulations are sufficiently complete and accurate to be the basis for the initial determination of the propulsion component requirements to meet MBTA’s performance criteria and needs.

### **1.7.3 Scope**

This performance simulation/summary duty cycle analysis is initial and preliminary and, since there are a limited number of pages allotted for the Technical Proposal portions of the response to MBTA’s RFP No. CAP 27-10, CNR has chosen to limit the presented data to the minimum and maximum propulsion and dynamic braking design conditions given in the Technical Provisions. Those conditions are propulsion at a third rail voltage of 530 VDC with AW3 vehicle loading and dynamic braking at a third rail voltage of 660 VDC with AW3 vehicle loading. However, simulations for both the Red Line and Orange Line have been performed for all combinations of vehicle loading (AW0 to AW3) and third rail voltage limits (530 VDC to 700 VDC), including abnormal operation, and can be made available to MBTA.

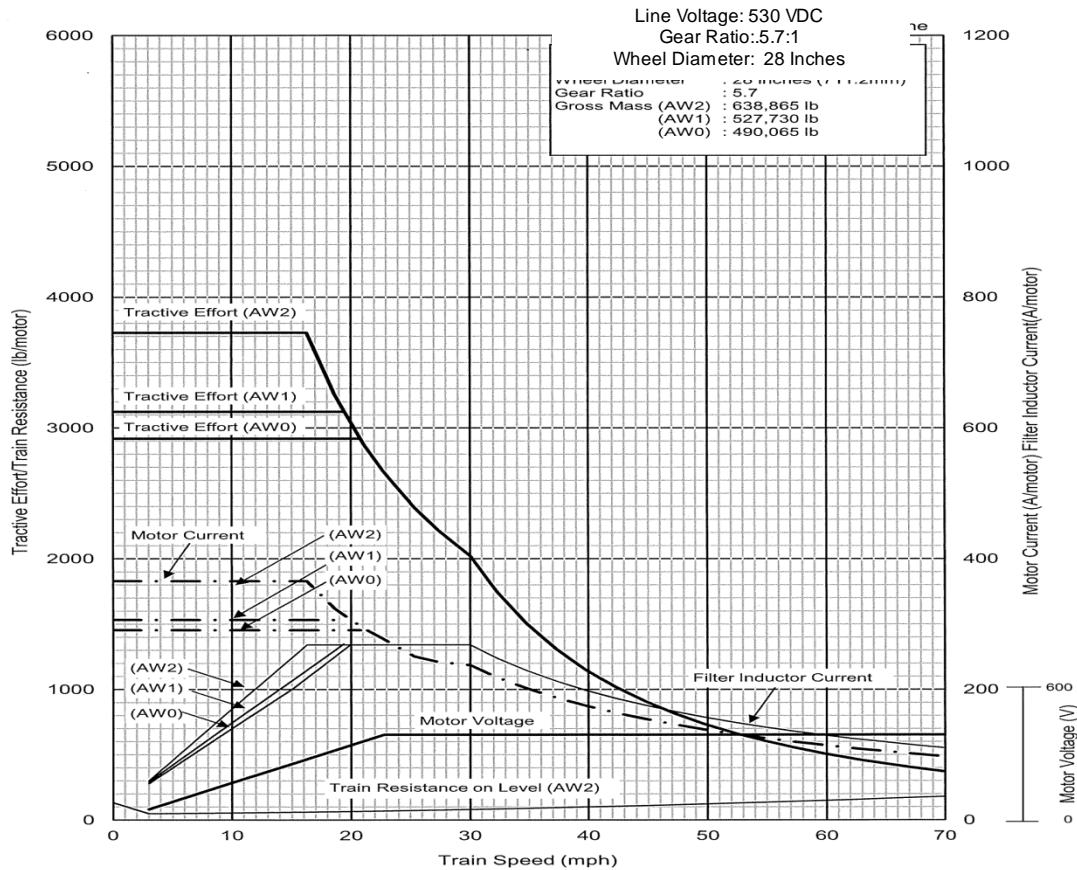
### **1.7.4 Simulations**

#### **1.7.4.1 Propulsion**

The Figure 1 propulsion motor curves during starting, acceleration, and running were simulated using the following criteria and from data extracted from the Red Line route profiles:

- Train Configuration: 3 married pairs (6 vehicles)
- Loading: AW3 – 750,000 lbs
- Maximum Design Speed: 63 mph
- Wheel Diameter: 28 inches
- Gear Ratio: 5.7:1
- Acceleration at start: 2.75 mph/s

- Starting train resistance (0-3 mph): 11 lb/ton
- Train resistance at speeds above 3 mph calculated with modified Davis Formula
- Adhesion: 11.9%

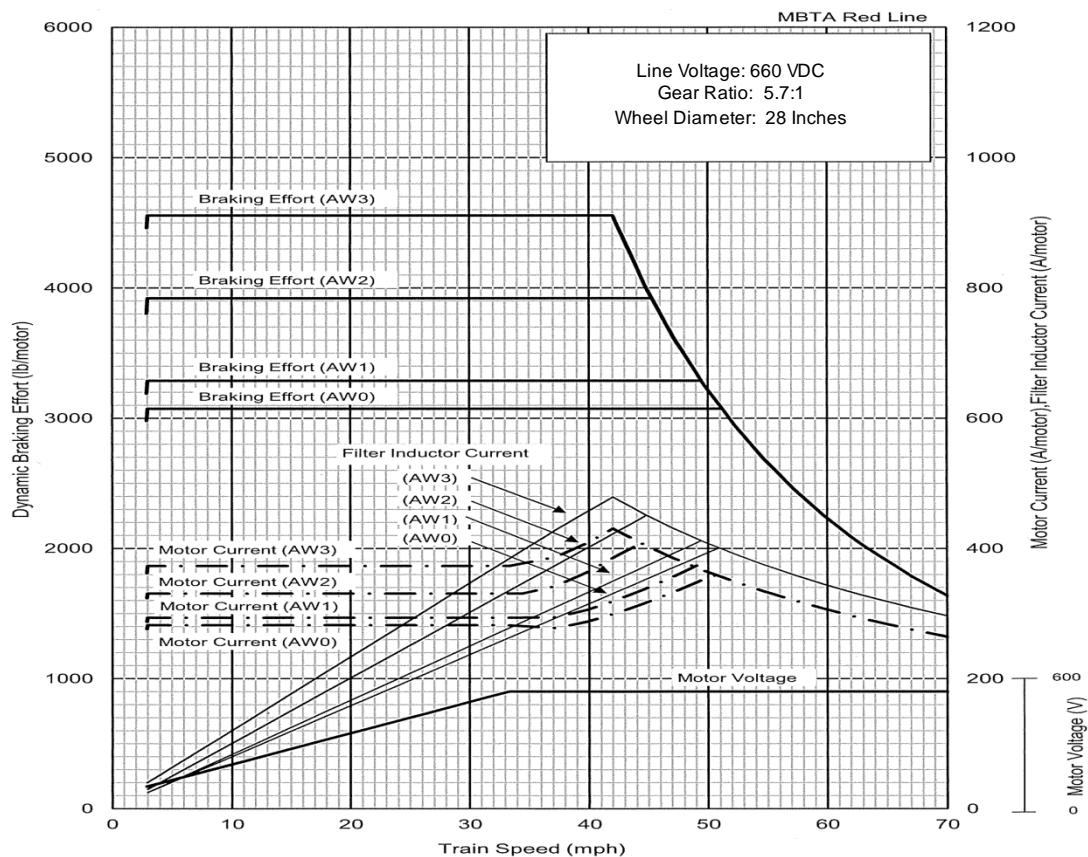


**Figure 1. Propulsion Performance Curves**

#### 1.7.4.2 Dynamic Braking

The Figure 2 dynamic braking motor curves during deceleration were simulated using the following criteria and from data extracted from the Red Line route profiles:

- Train Configuration: 3 married pairs (6 vehicles)
- Load: AW3 - 750,000 lbs
- Maximum Design Speed: 63 mph
- Wheel Diameter: 28 inches
- Gear Ratio: 5.7:1
- Deceleration: 3.0 mphps
- Adhesion: 14.6%



**Figure 2. Dynamic Braking Performance Curves**

#### 1.7.4.3 Duty Cycle – Red Line

Duty cycles were simulated using the following criteria:

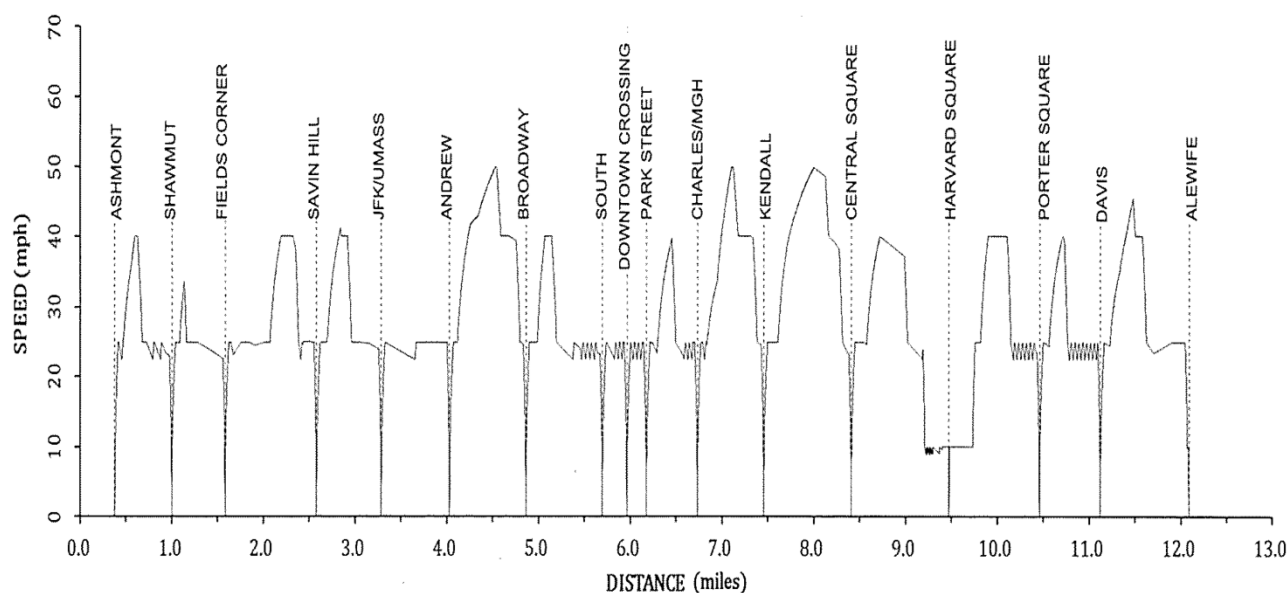
- Line voltage: Propulsion - 530 VDC, Dynamic Braking - 660 VDC
- Train Configuration: 3 married pairs (6 cars)
- Loading: AW3 – 750,000 lbs
- Wheel Diameter: 28 inches

- Acceleration: Maximum service rate
- Deceleration: Maximum service rate
- Dwell time: 30 seconds at each station; 3 minutes layover at the end of each line

**Table 1. Duty Cycle Simulation Data  
Ashmont to Alewife**

Station	Inter-Station Distance	Inter-Station Travel Time	Station Dwell Time	RMS Current		Power Consumption		
				Propulsion Current Per Motor	Line Current Per Motor	Propulsion Motors	Dynamic Braking	Total Power Consumption
	Miles	Minutes	Minutes	Amperes	Amperes	kWhours	kWhours	kWhours
ASHMONT	0.00	0.00	0.0	-----	-----	-----	-----	-----
SHAWMUT	0.62	1.56	0.5	219	169	1.0	-0.6	0.4
FIELDS CORNER	0.58	1.56	0.5	193	124	0.6	-0.3	0.3
SAVIN HILLS	1.00	2.34	0.5	182	126	0.9	-0.4	0.5
JFK/UMASS	0.71	1.67	0.5	202	153	0.8	-0.6	0.2
ANDREW SQ.	0.74	1.99	0.5	172	88	0.4	-0.2	0.2
BROADWAY	0.83	1.53	0.5	233	199	1.4	-0.8	0.6
SOUTH STATION	0.83	2.07	0.5	200	154	1.0	-0.6	0.4
DOWNTOWN CROSSING	0.27	0.82	0.5	239	155	0.6	-0.2	0.4
PARK ST.	0.21	0.68	0.5	270	174	0.6	-0.2	0.4
CHARLES	0.56	1.41	0.5	231	185	1.2	-0.5	0.7
KENDALL	0.72	1.44	0.5	256	216	1.3	-0.9	0.4
CENTRAL SQ.	0.95	1.78	0.5	209	173	1.4	-0.7	0.7
HARVARD SQ.	1.07	3.40	0.5	151	105	1.0	-0.4	0.6
PORTER SQ.	1.09	3.19	0.5	214	130	1.2	-0.5	0.7
DAVIS SQ.	0.66	1.67	0.5	233	199	1.9	-0.5	1.4
ALEWIFE	0.97	2.25	3.0	192	155	1.2	-0.7	0.5
Total/Average	11.82	29.36	11.0	200	147	16.5	-8.1	8.4

Note: The values in the RMS Current and Power Consumption columns do not include the dwell time at each station.



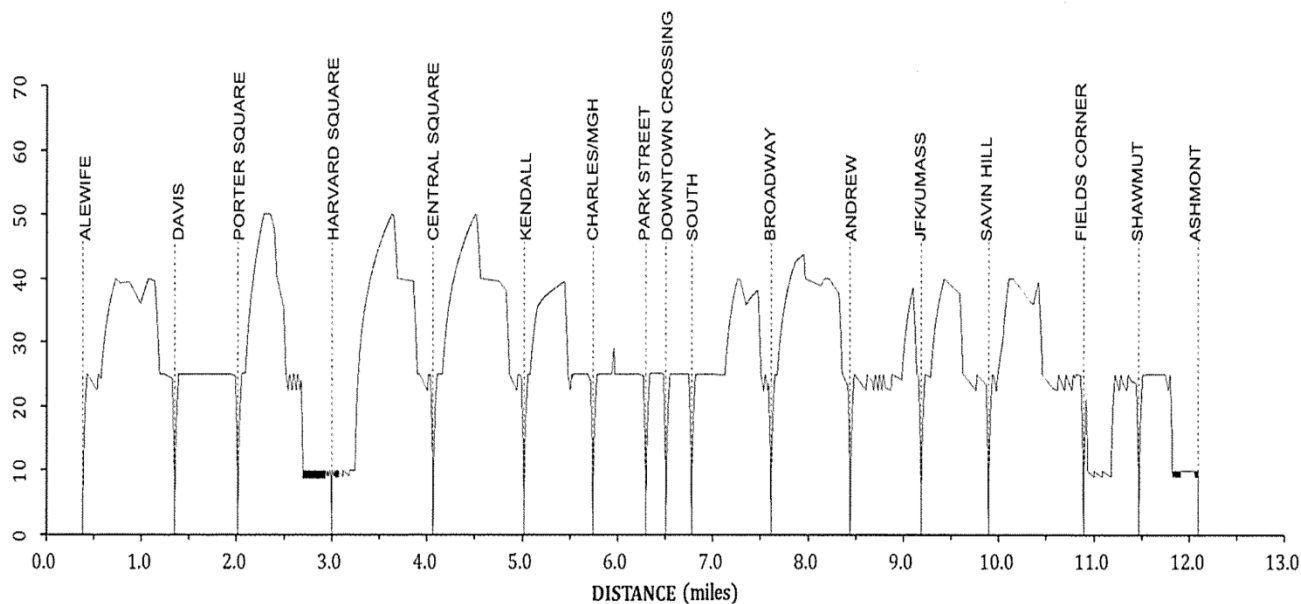
**Figure 3. Duty Cycle Simulation Curves - Ashmont to Alewife**



**Table 2. Duty Cycle Simulation Data  
Alewife to Ashmont**

Station	Station to Station Distance	Travel Time	Station Dwell Time	RMS Current		Power Consumption		
				Propulsion Current Per Motor	Line Current Per Motor	Propulsion Motors	Dynamic Braking	Total Power Consumption
	Miles	Minutes	Minutes	Amperes	Amperes	kWhours	kWhours	kWhours
ALEWIFE	0.00	0.00	0.0	-----	-----	-----	-----	-----
DAVIS SQ.	0.97	2.03	0.5	193	154	1.2	-0.6	0.6
PORTER SQ.	0.66	1.75	0.5	225	102	0.3	-0.2	0.1
HARVARD SQ.	1.09	3.32	0.5	204	138	1.9	-0.5	1.4
CENTRAL SQ.	1.07	3.10	0.5	174	139	1.4	-0.8	0.6
KENDALL	0.95	1.83	0.5	209	174	1.3	-0.7	0.6
CHARLES	0.72	1.61	0.5	236	185	1.6	-0.4	1.2
PARK ST.	0.56	1.49	0.5	205	113	0.5	-0.3	0.2
DOWNTOWN CROSSING	0.21	0.66	0.5	282	142	0.3	-0.2	0.1
SOUTH STATION	0.27	0.80	0.5	254	128	0.3	-0.2	0.1
BROADWAY	0.83	1.90	0.5	213	160	1.3	-0.4	0.9
ANDREW SQ.	0.83	1.59	0.5	211	170	1.2	-0.5	0.7
JFK/UMASS	0.74	1.92	0.5	197	158	1.2	-0.5	0.7
SAVIN HILLS	0.71	1.63	0.5	193	149	0.9	-0.4	0.5
FIELDS CORNER	1.00	2.27	0.5	183	149	1.3	-0.5	0.8
SHAWMUT	0.58	2.60	0.5	161	96	0.7	-0.3	0.4
ASHMONT	0.62	2.65	3.0	170	82	0.6	-0.2	0.4
Total/Average	11.82	31.15	11.0	195	132	16.0	-6.7	9.3

Note: The values in the RMS Current and Power Consumption columns do not include the dwell time at each station.

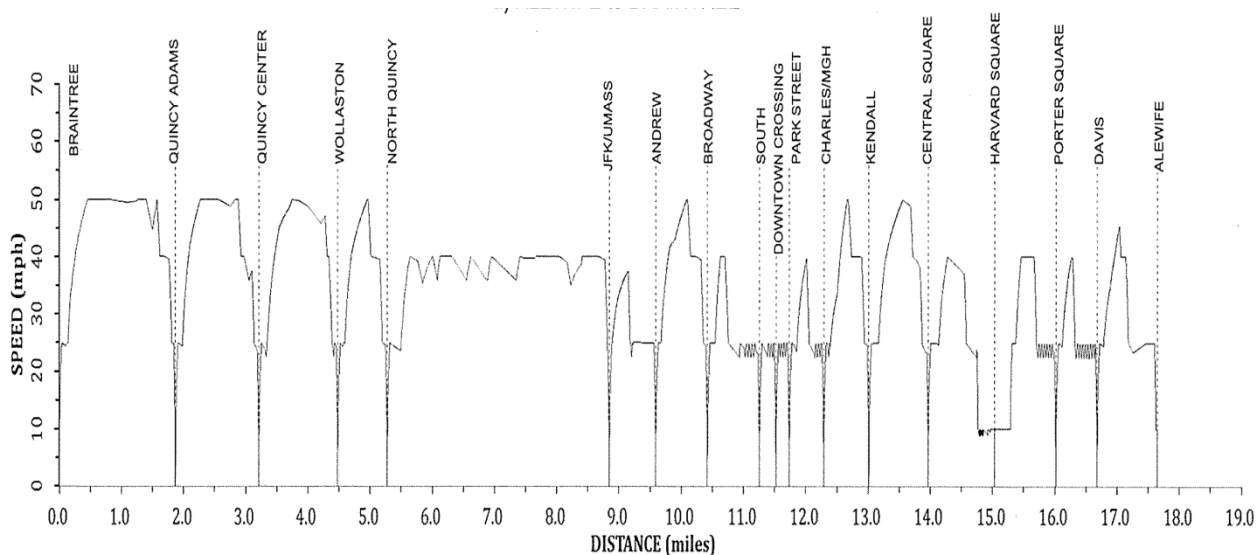


**Figure 4. Duty Cycle Simulation Curves - Alewife To Ashmont**

**Table 3. Duty Cycle Simulation Data  
Braintree to Alewife**

Station	Station to Station Distance	Travel Time	Station Dwell Time	RMS Current		Power Consumption		
				Propulsion Current Per Motor	Line Current Per Motor	Propulsion Motors	Dynamic Braking	Total Power Consumption
	Miles	Minutes	Minutes	Amperes	Amperes	kWhours	kWhours	kWhours
BRAINTREE	0.00	0.00	0.0	-----	-----	-----	-----	-----
QUINCY ADAMS	1.87	2.83	0.5	178	148	1.3	-0.9	0.4
QUINCY CENTER	1.34	2.18	0.5	191	160	1.3	-0.7	0.6
WOLLASTON	1.26	2.14	0.5	197	173	1.5	-0.8	0.7
NORTH QUINCY	0.79	1.52	0.5	229	192	1.3	-0.8	0.5
JFK/UMASS	3.58	5.96	0.5	142	121	2.5	-0.5	2
ANDREW SQ.	0.74	1.79	0.5	218	171	1.5	-0.4	1.1
BROADWAY	0.83	1.53	0.5	234	199	1.4	-0.8	0.6
SOUTH STATION	0.83	2.07	0.5	198	154	1.1	-0.6	0.5
DOWNTOWN CROSSING	0.27	0.82	0.5	240	160	0.6	-0.2	0.4
PARK ST.	0.21	0.68	0.5	271	178	0.6	-0.2	0.4
CHARLES	0.56	1.41	0.5	228	186	1.2	-0.5	0.7
KENDALL	0.72	1.45	0.5	252	215	1.3	-0.9	0.4
CENTRAL SQ.	0.95	1.78	0.5	207	173	1.3	-0.7	0.6
HARVARD SQ.	1.07	3.40	0.5	150	106	1	-0.4	0.6
PORTER SQ.	1.09	3.19	0.5	208	130	1.2	-0.5	0.7
DAVIS SQ.	0.66	1.67	0.5	236	202	1.9	-0.5	1.4
ALEWIFE	0.97	2.24	3.0	190	155	1.2	-0.7	0.5
Total/Average	17.73	36.66	11.5	210	166	22.2	-10.1	12.1

Note: The values in the RMS Current and Power Consumption columns do not include the dwell time at each station.

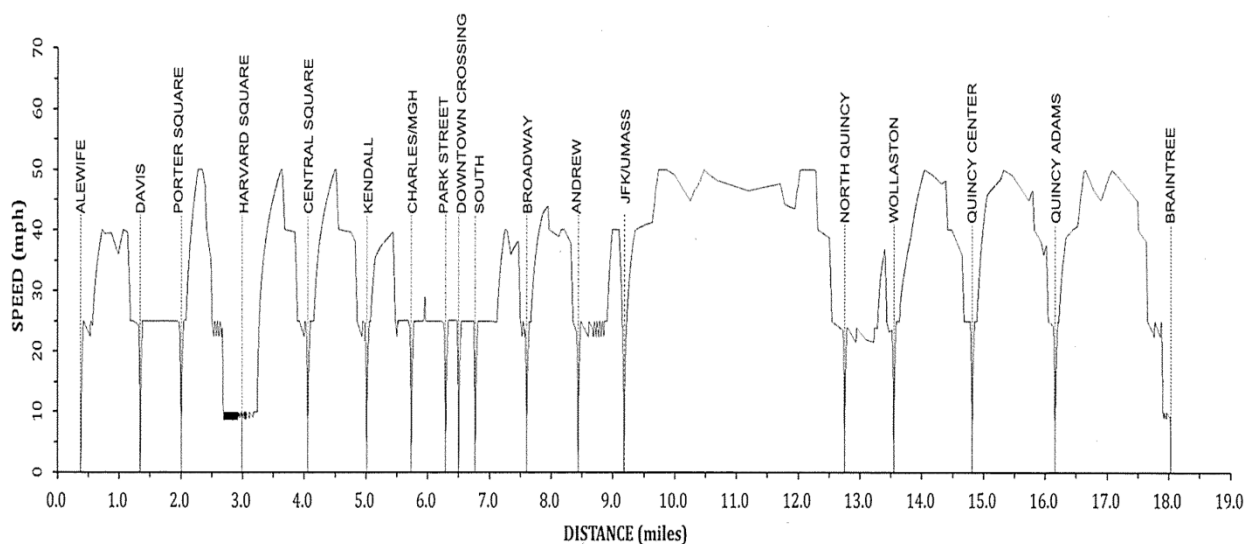


**Figure 5. Duty Cycle Simulation Curves - Braintree To Alewife**

**Table 4. Running Simulation Data  
Alewife to Braintree**

Station	Station to Station Distance	Travel Time	Station Dwell Time	RMS Current		Power Consumption		
				Propulsion Current Per Motor	Line Current Per Motor	Propulsion Motors	Dynamic Braking	Total Power Consumption
	Miles	Minutes	Minutes	Amperes	Amperes	kWhours	kWhours	kWhours
ALEWIFE	0.00	0.00	0.0	-----	-----	-----	-----	-----
DAVIS SQ.	0.97	2.03	0.5	28.67	192	155	1.2	-0.6
PORTER SQ.	0.66	1.75	0.5	22.63	218	101	0.3	-0.2
HARVARD SQ.	1.09	3.32	0.5	19.70	204	139	1.9	-0.5
CENTRAL SQ.	1.07	3.10	0.5	20.71	172	139	1.4	-0.8
KENDALL	0.95	1.83	0.5	31.15	207	174	1.3	-0.7
CHARLES	0.72	1.61	0.5	26.83	234	187	1.6	-0.4
PARK ST.	0.56	1.49	0.5	22.55	202	114	0.5	-0.3
DOWNTOWN CROSSING	0.21	0.66	0.5	19.09	277	144	0.3	-0.2
SOUTH STATION	0.27	0.80	0.5	20.25	250	129	0.3	-0.2
BROADWAY	0.83	1.90	0.5	26.21	211	161	1.3	-0.4
ANDREW SQ.	0.83	1.59	0.5	31.32	209	170	1.2	-0.5
JFK/UMASS	0.74	1.81	0.5	24.53	220	173	1.2	-0.6
NORTH QUINCY	3.58	5.17	0.5	41.55	146	132	2.7	-0.7
WOLLASTON	0.79	2.12	0.5	22.36	172	130	0.9	-0.4
QUINCY CENTER	1.26	2.21	0.5	34.21	197	163	1.5	-0.7
QUINCY ADAMS	1.34	2.21	0.5	36.38	187	159	1.6	-0.6
BRAINTREE	1.87	3.68	3.0	30.49	150	130	2	-0.5
Total/Average	<b>17.73</b>	37.28	11.5	203	147	21.2	-8.3	12.9

Note: The values in the RMS Current and Power Consumption columns do not include the dwell time at each station.



**Figure 6. Duty Cycle Simulation Curves – Alewife to Braintree**

### 1.7.5 Analysis

#### 1.7.5.1 Performance

##### Propulsion

An acceleration rate of 2.75 mphps $\pm$ 5% mphps from 0 to 16.3 mph $\pm$  0.2 mph at 530 VDC and AW3 is achieved as shown in Figure 1.

The MBTA Technical Provisions require an acceleration rate of 2.75 mphps to at least 16.3 mph.

The maximum permissible propulsion motor winding temperature was not exceeded.

##### Dynamic Braking

With dynamic brake only, the MBTA required deceleration rate of 3 mphps from 42 to 0 mph at 660 VDC and AW3 is achieved as shown in Figure 2.

Above 42 mph, the blending of friction and dynamic brake provides the required deceleration rate.

The maximum permissible propulsion motor winding temperature was not exceeded.

##### Regeneration

Regenerative braking simulation results are shown in the Table 5.

**Table 5. Red Line/Orange Line Regenerative Braking**

Speed	Minimum Required Regenerative Rate	Simulated Regenerative Brake Rate
42→5 mph	72 %	76.2 %
50→5 mph	65 %	66.2%

Note: The above is based on the following:

- Line voltage: 660 VDC Continuous
- Train Configuration: 3 married pair (6 cars)
- Loading: AW3
- Wheel Diameter: 28 inches
- Track Condition: Straight, level, tangent, and dry

#### 1.7.5.2 Travel Time and Average Speed

From the performance simulations above, the travel times and average speeds at route segments for the Red and Orange lines are summarized in Tables 6 and 7.



**Table 6. Red Line Travel Times And Average Speeds In Each Direction**

Route	Travel Time	Average Speed
	Minutes	MPH
Ashmont to Alewife*	29.36	24.16
Ashmont to Alewife	36.86	19.24
Alewife to Ashmont*	31.14	22.77
Alewife to Ashmont	38.64	18.35
Braintree to Alewife*	36.64	19.36
Braintree to Alewife	44.64	16.07
Alewife to Brintree*	37.29	19.02
Alewife to Brintree	45.29	15.83

\* Station dwell time not included.

**Table 7. Orange Line Travel Times And Average Speeds In Each Direction**

Route	Travel Time	Average Speed
	Minutes	MPH
Forest Hills to Oak Grove*	23.55	28.20
Forest Hills to Oak Grove	32.05	20.72
Oak Grove to Forest Hills*	23.38	28.41
Oak Grove to Forest Hills	31.88	20.83

\* Station dwell time not included.

### 1.7.5.3 Traction Motor Data

Using the traction motor data provided by the Red Line and Orange Line simulations, the recommended traction motor size is 84 KW (113 HP). See Tables 8 and 9.

**Table 8. Red Line Traction Motor**

Route (Round Trip)	Motor Current ( $A_{rms}$ )	Motor Load (kW)	Motor Winding Temperature (°F)	Motor HP To Gearbox
Alewife to Braintree	182	83.39	388	101

**Table 9. Orange Line Traction Motor**

Route (Round Trip)	Motor Current ( $A_{rms}$ )	Motor Load (kW)	Motor Winding Temperature (°F)	Motor HP To Gearbox
Oak Grove To Forest Hills	172	78.80	336	95

Note: The above calculation is based on the following:

- Motor Voltage: 389 V
- Power Factor: 0.68
- Efficiency: 0.90
- Normal Operation
- Station dwell times included

## 1.8 VEHICLE DESIGN APPROACH – RED AND ORANGE LINES

Below is the RFP requirement for the vehicle design approach for each vehicle type:

**Tab I.1 (h) Red and Orange Line Vehicle Design Approach**

*Describe how the design of the two different vehicles is approached while ensuring the use of same subsystems and components to the maximum extent possible.*

With almost all transit vehicle projects, there are at least two different vehicle types, and sometimes three or more, to be designed and manufactured. For the MBTA Orange and Red Line project, there will be four types of vehicle. There are three major aspects to be considered in such projects: the maximization of common systems and components; the optimization and control of manufacturing systems; and the optimization and control of the design engineering process. CNR is well acquainted with this.

Quite logically, it is in the best interests of both the transit agency and the vehicle supplier to utilize as many common systems and components as possible. CNR recognizes that Section T 2.01.01 I 2 of the Technical Provisions specifically requires that the Vehicle Monitoring System, the air compressor, and the battery be common to all vehicles. In addition, CNR recognizes that Section T 2.01.01 J of the Technical Provisions requires that the Red and Orange Line cars be designed to be as similar as possible and that all subsystems be as identical as possible. CNR also notes the requirement for a report to be prepared documenting all major subsystem parts that will not be common on the two lines, with technical and commercial justification as to why common parts would be a disadvantage to the MBTA (CDRL 02-01).

CNR will design each of the different vehicle types using a single design team, under the supervision of a single Project Engineer. In addition to formal design reviews (Preliminary and Final), CNR will carry out internal reviews at which the designs of each of the vehicle types will be discussed and critiqued. These internal reviews will be attended by representatives of CNR's Quality Assurance, Procurement, and Manufacturing Engineering departments, which will ensure that designs are as common as possible, utilize as many common components as possible, and that as much common tooling and the minimal number of manufacturing techniques are utilized. Strenuous efforts will be undertaken to ensure that common equipment will be used on all car types, and value analysis will be a core tool. Some of the considerations are outlined below.

- Based on the sizes of the Red and Orange Line cars delineated in Table 2-1 in Section T 2.01.02 B of the Technical Provisions and upon common performance requirements, it can be safely stated that the propulsion system, braking system, air conditioning system, coupler system, communication and passenger information system, and auxiliary power supply equipment for each car type will be identical. In addition, the door operators will be identical.
- Also based on Table 2-1, the underframes, roof frames, and sideframes of the Red and Orange Line cars will be different, but it is likely that the roof carlines could still use the same cross sections, which would reduce tooling costs. With respect to the underframes, construction could be very similar, with the cross sections of the side sills, center sills (if used), floor beams, and the majority of the end underframes being very similar, again reducing tooling costs.
- Also, the width of the Red Line car over thresholds is larger than that of the Orange Line car, and the width of the Red Line car at the underframe is larger than that of the Orange Line,

which means that the profile of the two cars' sideframes are likely to be different. However, the cross section of the side frame structural members could be the same, and the window cutouts in the side sheets can be the same size.

- The distance from the top of rail to the top of the floor on the Red Line car is greater than that on the Orange Line car, which, because the same trucks will be used under both car types, means that the truck interface with the carbody bolster will likely be different. Except for primary suspension details, the trucks should be almost identical.
- Although the carbody sideframes of the Red and Orange Line cars will likely have different profiles, it may still be possible to utilize the same door leaves; this will, of course, be investigated. It is also envisaged that many of the passenger compartment windows could be common. While it may not be entirely possible to incorporate common interior finish panels, the window masks should be identical, and it should be feasible to utilize a common panel installation system.
- It will be important to ensure that common floor panels will be used, which means common floor beam spacing. And, of course, it will be possible to use common floor covering material.
- It is also envisaged that most of the passenger compartment lighting fixtures, air conditioning system and air diffusers could be common.
- And, of course, all vehicle types will utilize common pneumatic piping, wire and cabling, thermal insulation, electrical terminals, contactors and relays, etc.

## 1.9 ELECTROMAGNETIC COMPATIBILITY (EMC)

Below is the RFP requirement for Electromagnetic Compatibility:

**Tab I.1 (i) Organization Chart, Resume and Responsibilities of Key Staff**

*Describe how EMC will be achieved and interferences with the train control system avoided.*

### 1.9.1 General

CNR recognizes that the new MBTA Red Line and Orange Line vehicles and vehicle systems need to be designed and manufactured to not only be immune to wayside and vehicle conductive, inductive, and radiated emissions, but to also not generate conductive, inductive, or radiated emissions that would negatively affect the operation and performance of onboard systems and wayside equipment and adjacent areas. Electrostatic discharge also needs to be of concern in the design of the vehicles systems and subsystems.

Where applicable, CNR will follow MIL-STD-461E, "Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment".

CNR will prepare an EMC plan covering the steps below. The EMC plan will include a process to mitigate potential electromagnetic radiation health or safety hazards to humans on the vehicle or at wayside locations such as stations. The limits will be based on the criteria given in Section T 2.07.04 of the MBTA Technical Provisions.

The EMC plan will be submitted to MBTA under CDRL 02-18, Electromagnetic Compatibility Plan, as part of the Preliminary Design Review package.

EMC considerations will be an integral part of CNR's systems integration process. Refer to Section 1.12 for details on the systems integration process.

### **1.9.2 Approach**

CNR's approach to achieving the EMC requirements given in Section T 02.07 of MBTA Technical Provisions includes the following steps:

- Determine the conductive, inductive, and radiated emission limits necessary to ensure vehicle and train emissions will not adversely affect onboard and wayside signal equipment.
- Establish design and manufacturing criteria to control and limit the generation of electromagnetic emissions from onboard systems, subsystems, and components. Particular attention will be paid to the vehicle equipment effects on the train control system.
- Establish design and manufacturing criteria to eliminate or reduce onboard systems, subsystems, and components susceptibility to electromagnetic emissions produced by other systems, subsystems, and components and by wayside equipment.
- Verify the results of the EMC control design effort through EMC testing at vehicle and train levels. The final designs will meet the requirements of EN 50155, "Railway Applications - Electronic Equipment Used On Rolling Stock".

### **1.9.3 Electromagnetic Emissions Measurement**

Within ninety days from notice to proceed, CNR will undertake the task of establishing, by test, the electromagnetic emissions limits for the signaling systems on the Red Line and Orange Line routes. CNR will use UMTA-MA-06-0153-87-2, "UMTA Suggested Procedures," and will follow the guidelines given in Sections T 2.07.02.A, B, C, and D. of the MBTA Technical Provisions. At the conclusion of these tasks, CNR will produce a report showing the results of the measurements and data collection. The report will be submitted to MBTA as CDRL 02-19, Verification of Emissions Limits, and will include an interference sources and receivers analysis as outlined in Section 5.4 of APTA Standard SS-E-10-98, "Standard for the Development of an Electromagnetic Compatibility Plan".

Presently, CNR is investigating combining the performance of the EMC measurements procedures at the same time CNR performs the track profile procedures.

### **1.9.4 Design/Manufacturing Criteria to Limit Onboard System Susceptibility to Electromagnetic Emissions**

As a minimum and as part of the systems, subsystems, and components design effort, CNR and their suppliers will follow the guidelines shown below.

- Signal levels will be chosen to ensure all signals are at least 6 db higher than any measured or anticipated interference noise levels.
- Where suppression of voltage spikes by inductive devices is not sufficient, suitable filters will be used on susceptible equipment.
- Where possible, components that are or may be a source of electromagnetic emissions will be physically located to minimize interference with other systems, subsystems, or components.



- Cabling and wiring will be properly shielded, terminated, routed, and enclosed in conduit to reduce interference and cross-talk. Section 4.8.2.1 of IEEE STD 16-2004, "IEEE Standard for Electrical and Electronic Control Apparatus on Rail Vehicles" will be used as guidance.

#### **1.9.5 Design/Manufacturing Criteria to Limit Onboard System Generation of Electromagnetic Emissions**

As a minimum and as part of the systems, subsystems, and components design effort, CNR and their suppliers will follow the guidelines shown below.

- Signal levels will be chosen to ensure all interference noise levels are at least 6 db lower than signal levels.
- Propulsion, APS, and LVPS inverters/converters will be provided with input filtering to limit conductive emissions to the third rail. At the minimum, the line filters will be inductive at frequencies of 40 Hz and above and will be designed to have inductance sufficient to suppress substation 60 Hz harmonics to levels below the limits established in CDRL 02-19, Verification of Emissions Limits.
- All voltage spikes caused by inductive device switching will be properly suppressed.
- Where possible, equipment overly susceptible to electromagnetic emissions will be physically located to minimize the effects of the emissions.

#### **1.9.6 Electromagnetic Emission Safety Analysis**

CNR will perform a Failure Modes Effects Criticality Analysis (FMECA) for the traction inverters, APS inverter, and LVPS converter. The data will be used to create a fault tree analysis. The results will be submitted to MBTA as CDRL 02-20, Train to Wayside Emissions Safety Analysis.

#### **1.9.7 EMC Verification and Testing**

CNR will prepare and submit for approval a conductive, inductive, and radiated emissions test plan that will verify that the train-to-wayside emission limits do not exceed the requirements given in Section T 2.07.02 of the MBTA Technical Provisions. CNR will use the following documents as guidelines for the test plan.

- UMTA-MA-06-0153-85-6, "Conductive Interference in Rapid Transit Signaling Systems" - Volume II: Suggested Test Procedures, Method RT/CE02A, "Conducted Emission Test, Vehicle"
- UMTA-MA-06-0153-85-8, "Inductive Interference in Rapid Transit Signaling Systems" - Volume II: Suggested Test Procedures, Method RT/IE01A, "Inductive Emissions of Vehicular Electrical Power Subsystem, Rail-to-Rail Voltage from 20 Hz to 20 kHz"
- UMTA-MA-06-0153-85-11, "Radiated Interference in Rapid Transit Signaling Systems" - Volume II: Suggested Test Procedures, Method RT/RE01A, "Broadband Emissions of Rapid Transit Vehicles -140 kHz to 400 MHz"
- EN 50121-3-1, "Electromagnetic Compatibility – Part 3-2: Rolling Stock – Apparatus".

As part of qualification testing, CNR will ensure that laboratory tests are conducted as necessary to verify that the Propulsion, APS, and LVPS converters/inverters conductive and inductive emissions do not exceed their allotted portion of the allowed total vehicle or train emissions defined in MBTA Technical Provisions Section T 2.07.

CNR will verify that the train control systems are immune to the levels of electromagnetic interference given in Section T 2.07 of the MBTA Technical Provisions.

CNR will verify that the resonant frequency of all auxiliary input filters, under worst case conditions of temperature, tolerance and aging, are in compliance with requirements of Section T 2.07 of the MBTA Technical Provisions.

To show that the requirements of the EMC Plan are met, the APS inverter output voltage and current harmonics will be measured under all loads and input voltages. The results will be used to also show that the harmonics do not exceed the specified requirements of any connected motors.

## 1.10 PROJECT SCHEDULE

Below is the RFP requirement for the Project Schedule:

Tab I.1 (j) Project Schedule
<i>Submit a detailed schedule for the design, manufacture, testing and delivery of each car in the form of a milestone type bar chart. Each chart shall indicate anticipated dates for starting and completing all major aspects of the program including, but not limited to, First Article Inspection and completion of major hardware components; the delivery to the MBTA of the Pilot Cars and subsequent delivery of the balance of the Cars on order. Quantity to be delivered shall be clearly noted.</i>

This section provides an overview of CNR's scheduling process and provides a look a "Summary Schedule" which is used to identify key delivery dates and milestones established by MBTA. As required by Section C6.05 of the MBTA's Request for Proposals CAP 27-10 the summary schedule shows key areas such as;

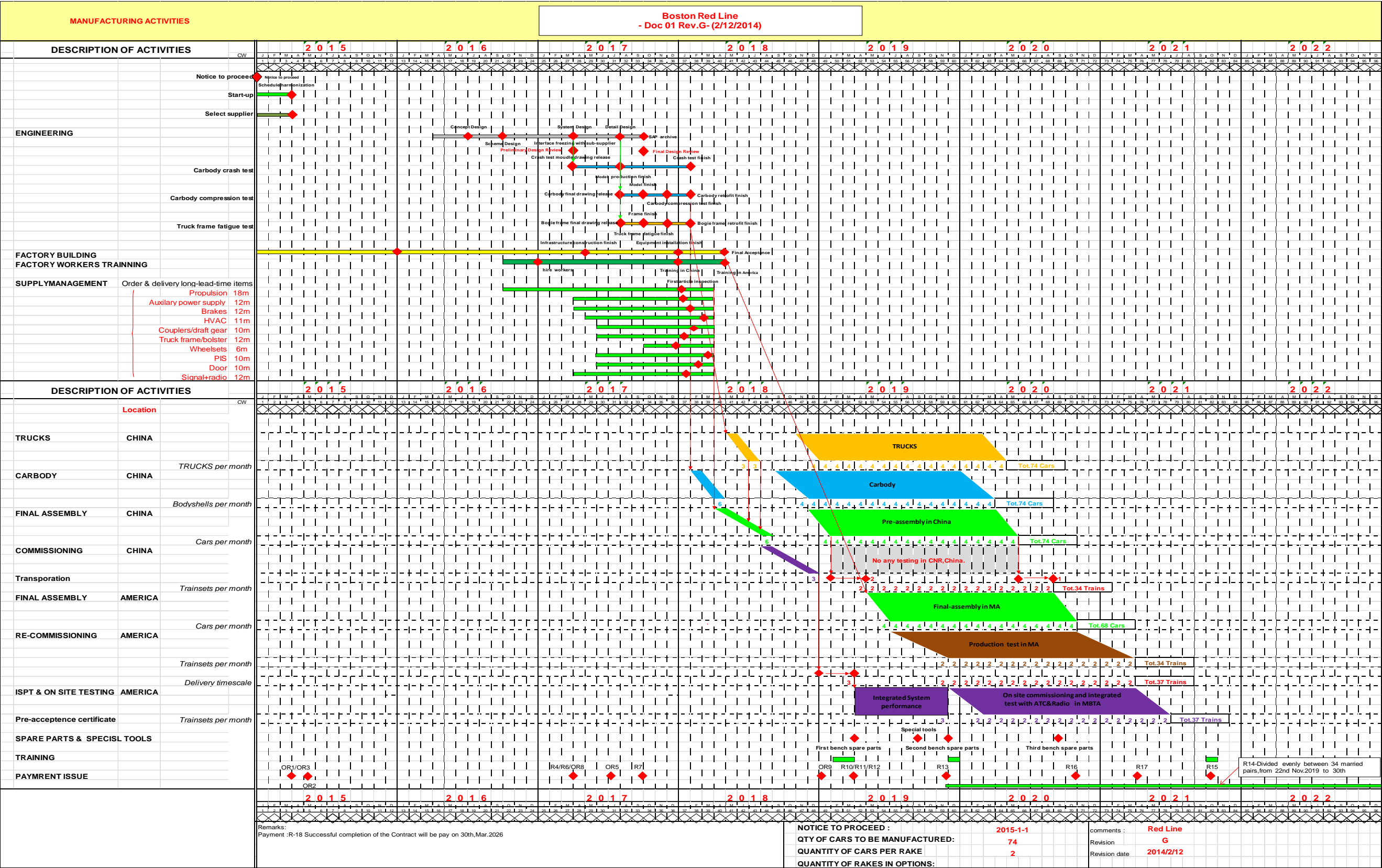
- The 6 Orange Line Pilot Cars will be delivered to the MBTA within 36 months from Notice to Proceed.
- Delivery of the Orange Line production cars will begin within 48 months from Notice to Proceed at the rate of 4 cars per month per line.
- The 6 Red Line Pilot Cars will be delivered to the MBTA within 51 months from NTP.
- Delivery of the Base Red Line production cars will begin within 59 months from Notice to Proceed at the rate of 4 cars per month per line.
- Manuals,
- Training Aids and Other Components

These dates, as well as other key dates in the summary schedule are established by customer expectations which are specified in the current project documentation. These dates, once approved post award, will be used as a basis to plan project activities in the detailed base line schedule, for both base contract and options, in such a way to ensure that all expected dates are met. The detailed schedule will also serve as a means to regularly report to MBTA how CNR is performing against the baseline schedule. CNR will present Critical Path Methodology (CPM) Project Master Schedule as stated in section C4.03 within 30 days of NTP.

Additionally the "Summary Baseline" schedule serves as an effective global view of the overall schedule and can be adjusted, by highlighting specific areas, to serve the particular requirements of stake holders.

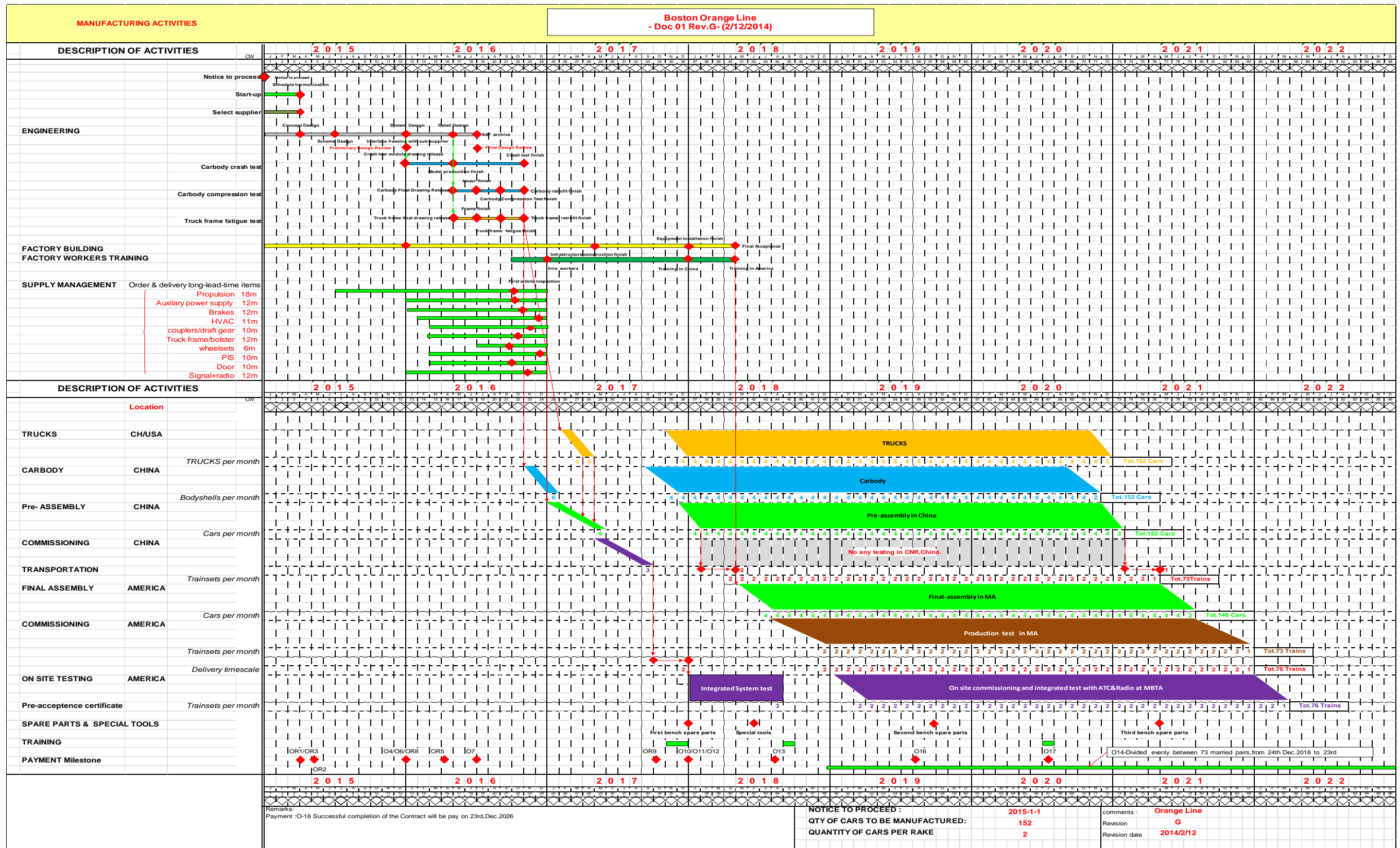
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In the following pages you will see the summary schedule for both the Red and Orange line programs.





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The detailed CPM schedule is based on the key established dates of this RFP and the capacity of CNR's entire organization. The schedule will integrate all critical activities for Project Management, Engineering, Purchasing, Planning, Quality, Manufacturing, and Commissioning. In all cases where a review and approval process with the customer is necessary CNR will allow adequate time to ensure that these reviews do not negatively impact the team's ability to meet the established dates. Recognizing that during the design review process there may be occasions where there will be more time necessary to satisfy all stake holders prior to finalizing design so CNR will make every accommodation to limit its impact on overall schedule.

First Article Inspections (FAI's) can also require additional time to close so again CNR will make all necessary accommodations to mitigate negative impact on schedule by building float into the schedule and provide plans for recovery if necessary.

CNR has many years of experience in planning, preparing, controlling and reporting on complex schedules. CNR's experience demonstrates its ability to deliver on time by the means described above as well as having developed proven approaches to correcting schedules that have slipped for reasons that often occur during the course of a large procurement such as MBTA's Red Line / Orange Line vehicle procurement. As the description of "Critical Path Methodology" implies, identifying those risks that have the greatest potential to negatively impact CNR's ability to adhere to the baseline schedule is key to both the customer and CNR. CNR has already, for the purpose of this proposal, created a baseline schedule that has been constructed consistent with MBTA's requirements as well as CNR's processes and practices. If CNR is selected to serve MBTA on this procurement this initial baseline will be used as the foundational document to gain approval and acceptance for the CPM Project Master Schedule as stated in section C4.03 within 30 days of NTP.

CNR has created the detailed schedule with this in mind by providing all design, procurement, logistics, purchase orders, FAI's of components, material delivery, vehicle manufacture, vehicle delivery, testing/commissioning with logical linking and sequencing to ensure that risks can be identified and on-time completion can be achieved. These steps are detailed out for each major system and logically linked. Items with recognized long lead times will be prioritized in the sequencing.

CNR is planning, and will commit, to having a central team working in Boston, Massachusetts in very close contact with designated MBTA officers and managers. Having engineering, manufacturing, purchasing, planning and executive management staff located on site will be a significant benefit for the project, especially for dealing with any changes that might occur as a result of unanticipated issues that might arise during the course of the project. CNR will be able to move quickly and maintain a necessary level of flexibility to accommodate customer needs and overall project needs. This approach will be necessary during all phases of the project, including the initial manufacturing site build out. CNR will make the additional of having local representation at the earliest stages of the planning and construction of the manufacturing facility in Springfield. CNR believes that by having this local representation there are efficiencies realized that cannot be realized by not having the local presence. Additionally, having this local presence allows CNR to collaborate with MBTA on this critical step in incorporate details that better serve the project and thus MBTA.

An area of particular concentration to CNR will be in dealing with suppliers. Knowing that schedule adherence by CNR will be enormously impacted by its suppliers adhering to their respective schedules. CNR will enter into supplier agreements with a clear understanding and clear expectations from all suppliers that their respective ability to adhere to the baseline schedule has a

direct impact on CNR's ability in meeting MBTA's expectations for delivery. These schedule details, as well as relevant technical requirements and supplier deliverables, will be included in contract language between CNR and its suppliers to mitigate problems during the course of the program. CNR recognizes, and accepts, its own responsibility in working with suppliers by ensuring that all commercial and technical matters are addressed in an expeditious way.

CNR believes that the systems integrator will play a significant role in minimizing negative schedule impacts during design reviews, FAI's and testing. CNR recognizes that the better it manages the integration of all systems the less risk there will be to the project and it is for this reason that special emphasis will be placed on systems integration as usual.

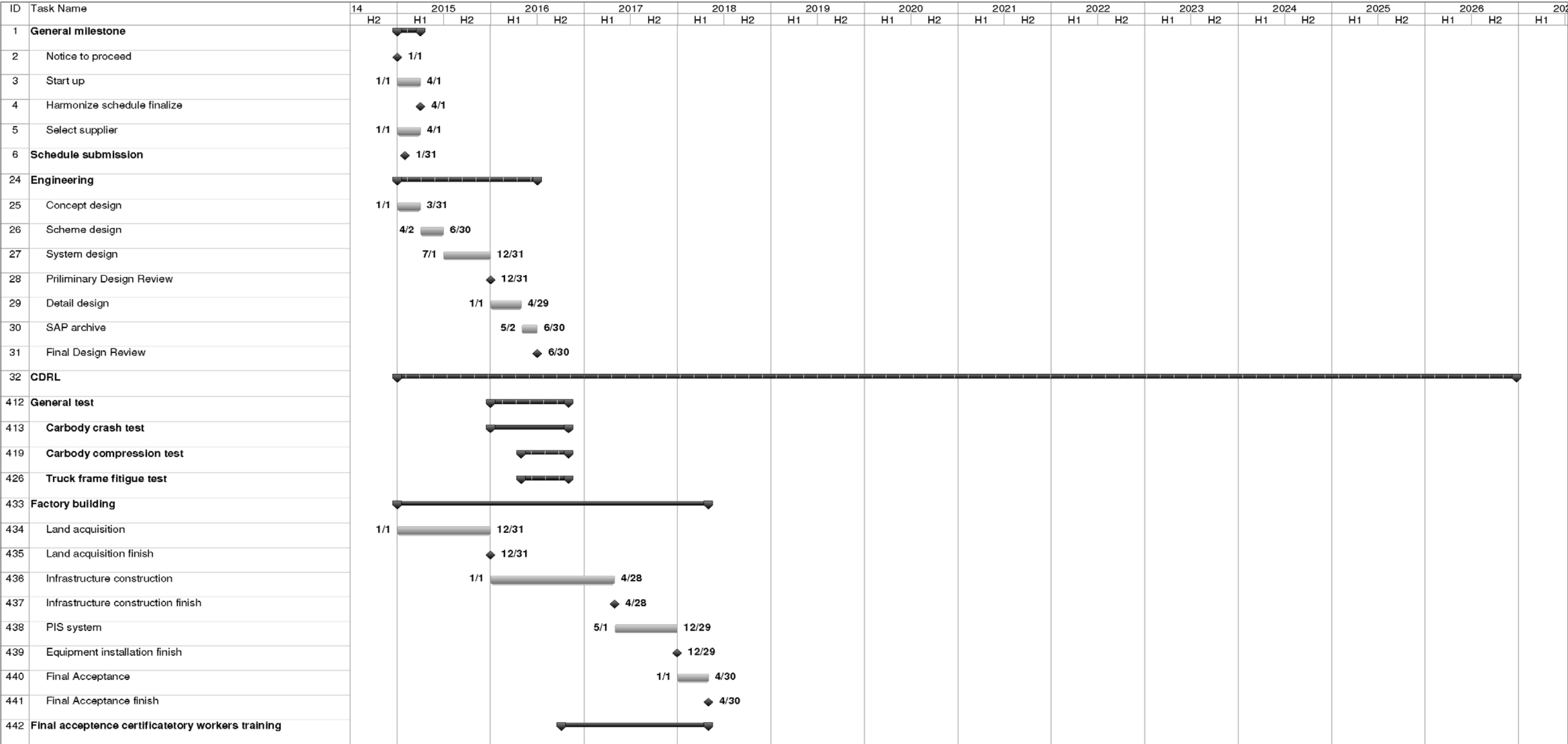
In the event that there are schedule delays, CNR has appointed the program manager as having ultimate responsibility to address them with the necessary authority to make those changes necessary to remedy the problem. Additionally CNR has established the executive committee that will serve as a governing board which will include a representative from MBTA. The purpose of this board is to meet regularly and to review the efficient functioning of the entire project team. As it relates to schedule adherence the executive committee will ensure that the project manager has the necessary tools, responsibility and authority to take necessary corrective action to mitigate schedule delays.

The detailed schedule will contain the following key activities (not all inclusive):

- As required by Section C6.05C of the MBTA's Request For Proposals CAP 27-10, the 6 Orange Line Pilot Cars will be delivered to the MBTA within 36 months from Notice To Proceed.
- As required by Section C6.05D of the RFP, delivery of the Orange Line production cars will begin within 48 months from Notice to Proceed at the rate of 4 cars per month per line.
- As required by Section C6.05E of the RFP, the 6 Red Line Pilot Cars will be delivered to the MBTA within 51 months from NTP.
- As required by Section C6.05F of the RFP, delivery of the Base Red Line production cars will begin within 59 months from Notice to Proceed at the rate of 4 cars per month per line.
- The Conceptual Design Review period, the Preliminary Design Review period and the Final Design Review period. It should be noted that design engineering work will be taking place throughout these periods.
- The Manufacturing Engineering phase. CNR's Manufacturing Engineering department will be transforming Design Engineering documentation into a form that is readily usable by Manufacturing department technicians, and designing the necessary tooling to assist the manufacturing processes.
- The Manufacturing tooling phase. Tooling is being manufactured and installed to support all manufacturing processes.
- The carbody structure parts manufacturing and final assembly phase.
- The First Article Inspection dates for the carbody structure, trucks, propulsion system, auxiliary power supply system, ATC system, communications system, HVAC system, door system, interior finish and seats, final car assembly. This, of course, also identifies the completion of major hardware components.
- The delivery dates for the Orange and Red Line Pilot cars, and the delivery dates for individual Orange and Red Line production cars.

- 
- The training period. CNR and its sub-suppliers will be holding training sessions for MBTA personnel in how to maintain car-borne equipment.
  - The vehicle commissioning/Qualification test period.
  - The delivery dates for the maintenance manuals, training manuals and spare parts catalogs.
  - The reliability assessment period.
  - The warranty support period.

In the following pages CNR presents excerpts from both the Orange line and Red line detailed schedule. As previously mentioned CNR has prepared these detailed schedules consistent with the requirements and currently have over 1500 activities each. In the event CNR has the opportunity to serve MBTA's interest on this program then this document will be the basis for achieving mutual agreement on the baseline schedule to be delivered within 30 days of NTP.



Project: MSProj11  
Date: Tue 5/13/14

Task

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

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Rolled Up Progress

Split

External Tasks

Project Summary

Group By Summary

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Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

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Manual Summary Rollup

Manual Summary

Start-only

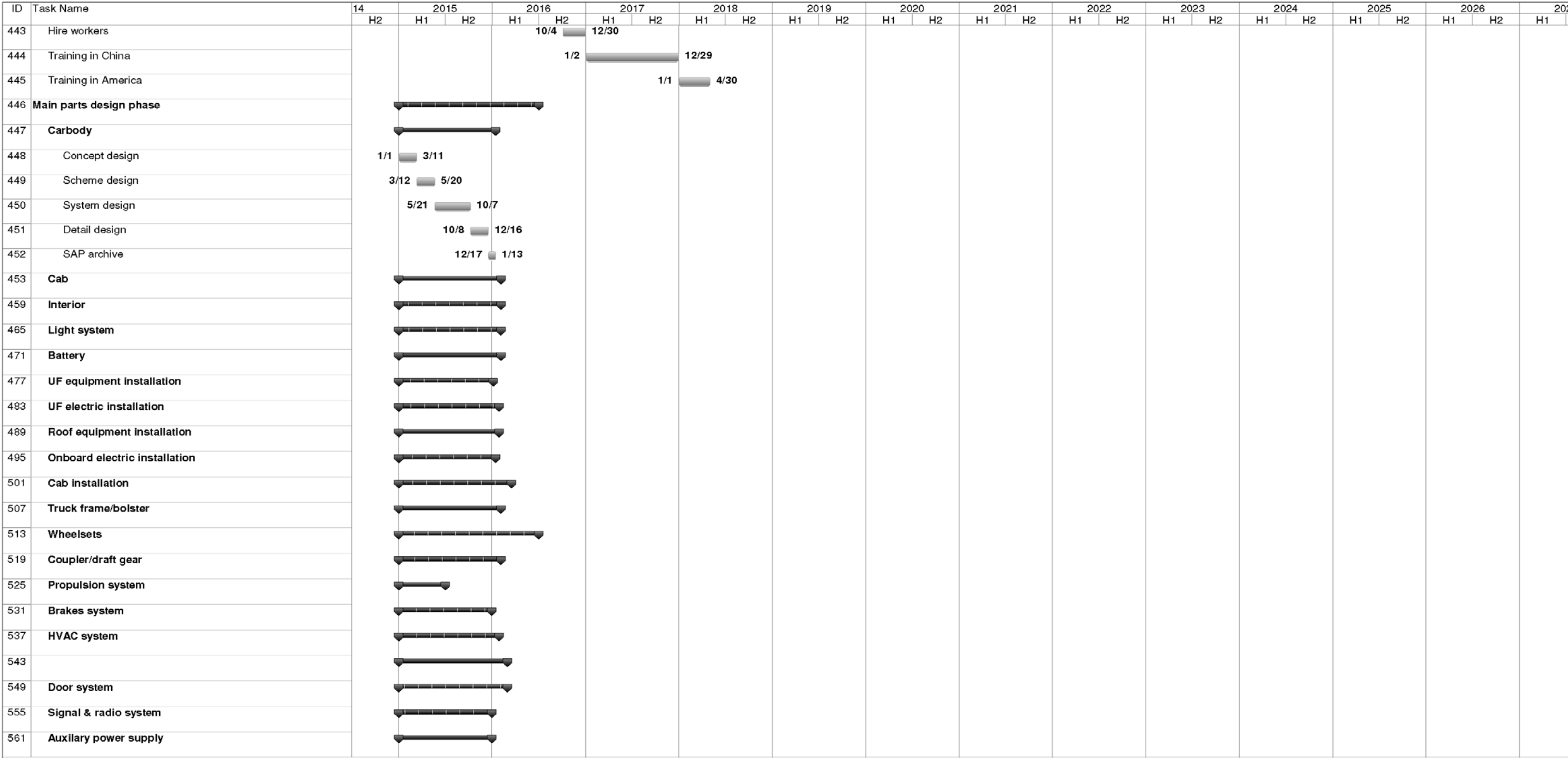
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Progress

Deadline



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Project: MSProj11  
Date: Tue 5/13/14

Task

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Rolled Up Progress

Split

External Tasks

Project Summary

Group By Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

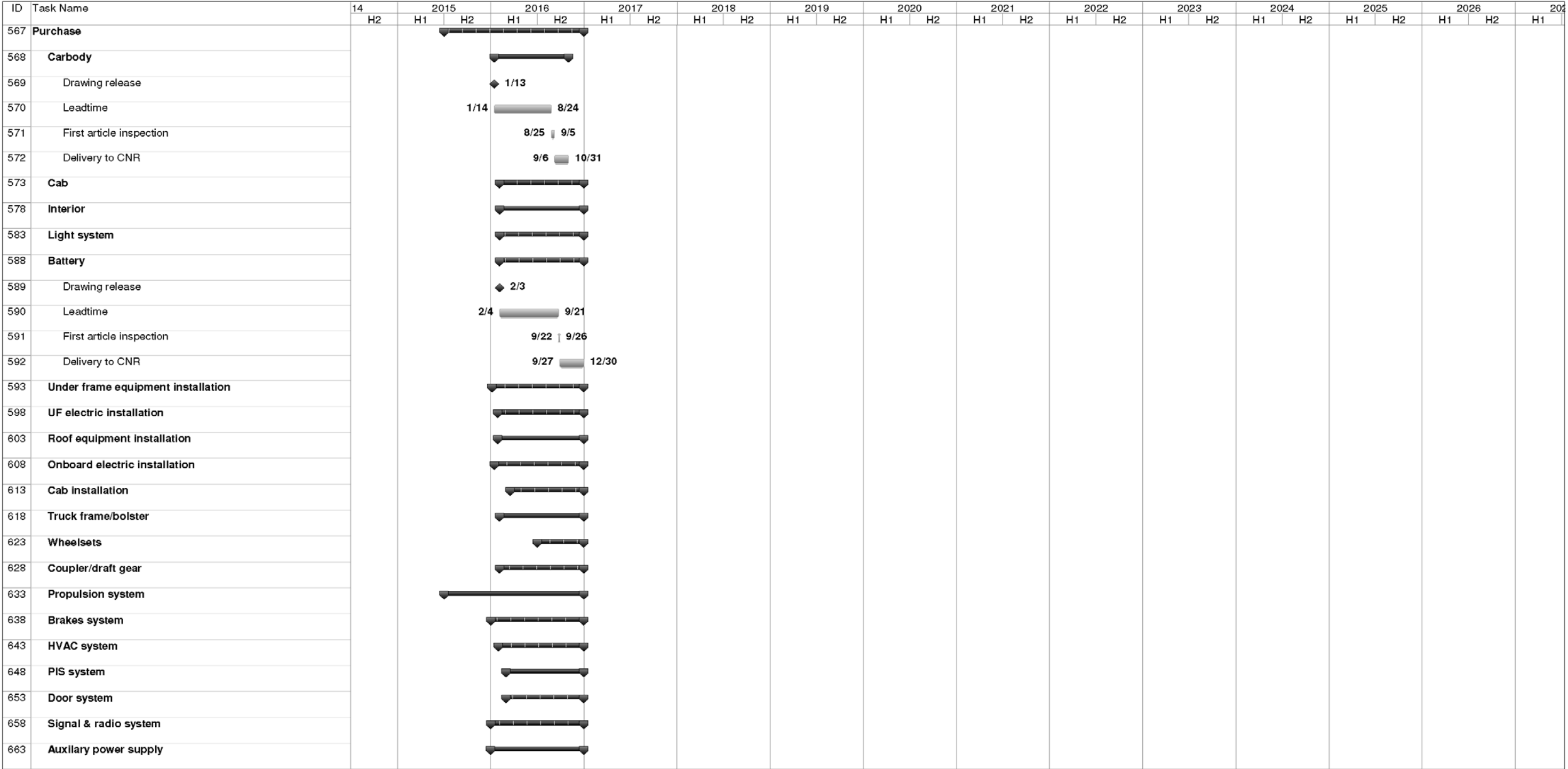
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Progress

Deadline

Page 2

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Project: MSProj11  
Date: Tue 5/13/14

Task

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Summary

Rolled Up Task

Rolled Up Milestone

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Rolled Up Progress

Split

External Tasks

Project Summary

Group By Summary

Inactive Task

Inactive Milestone

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Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Progress

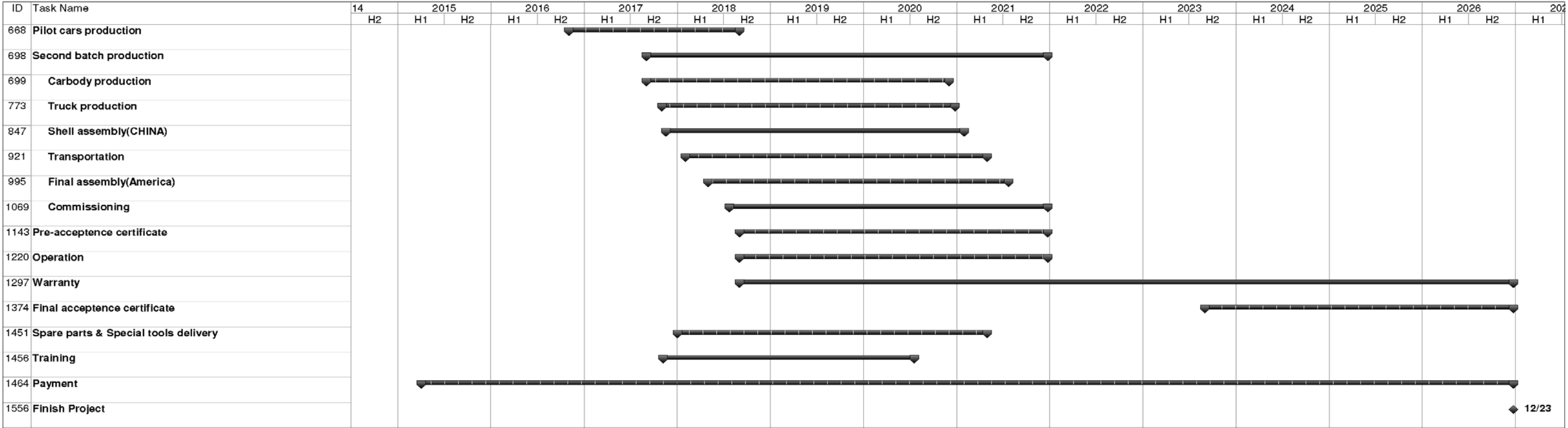
Deadline

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Page 3



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Project: MSProj11  
Date: Tue 5/13/14

Task		Rolled Up Progress		Inactive Task		Manual Summary Rollup		Deadline	
Milestone		Split		Inactive Milestone		Manual Summary			
Summary		External Tasks		Inactive Summary		Start-only			
Rolled Up Task		Project Summary		Manual Task		Finish-only			
Rolled Up Milestone		Group By Summary		Duration-only		Progress			

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## 1.11 DESIGN REVIEW PROCESS

Below is the RFP requirement for the performance simulation and summary duty cycle analysis:

Tab I.1 (k) Design Review Process

*Present the Design Review Process, including the presentation of the contents of Preliminary and Final design reviews. The Offeror shall present the proposed process for progressing through these as well as the approach to addressing questions and concerns of the MBTA.*

CNR's normal practice is to develop the design of the vehicles in a carefully controlled manner, proceeding through an Internal, Preliminary, and Final design review phase, during which the designs are progressed in ever increasing detail until the client is satisfied that the component, systems and overall vehicle design meets the requirements of the Technical Provisions. On the MBTA Orange and Red Line project, CNR will perform an internal design review, and will informally review with MBTA for their comments. After the internal design is completed, Preliminary and Final design reviews will be conducted with MBTA in accordance with Section T 21.06 of the Technical Provisions.

CNR will submit to the MBTA for review and acceptance a detailed schedule for the entire design review program including the applicable Contractual Deliverable Requirement List (CDRLs), from the preliminary design phase through the final design phase. This schedule will identify all design submissions, which will be grouped into logical packages.

Based on the requirements of the MBTA Technical Provisions, the Systems Engineering Group and the Design Engineering Group will produce technical descriptions of all vehicle systems and equipment, which will describe in detail all pertinent requirements to allow the design of the systems and equipment to proceed. This will include the requirements for the carbody structure and appurtenances, the vehicle interior, major equipment, etc. Such requirements will include function, interface, RAMS, EMC, fire safety, weight, noise emissions, etc. These documents will be checked by other Design Engineers, then an internal meeting will be held attended by the System Engineer/Design Engineers, the Systems Integrator and Quality Assurance to review these documents to make sure the requirements of MBTA are fully satisfied. After this review the Design Engineer will update these documents. Using the technical descriptions, the engineering team will generate interface control documents defining all interface requirements. These documents will be reviewed with the pertinent equipment/system suppliers, who will also be signatories for configuration management purposes.

As the design process proceeds, using the technical descriptions and interface control documents as a basis, frequent internal design reviews will be held with the Design Engineers, the Systems Engineers, the Systems Integrator, the Industrial Designer and Quality Assurance to resolve issues and to ensure that the design objectives, including schedule adherence, are being met. Naturally, comments received from MBTA and the various suppliers will be discussed and addressed during these review sessions.

Informal and formal discussions with MBTA, and formal design reviews with MBTA will also provide important feedback, and will serve to ensure that the vehicle design is in compliance with MBTA's requirements. The design review sessions will be conducted by the CNR Project Engineer with support, as necessary, from CNR Engineers and equipment supplier engineers. This will allow



MBTA to gain an in-depth knowledge of the systems and equipment, and allow designs to be approved as quickly as possible.

The design review submissions will be such as to logically progress the completion of the designs based on comments received from MBTA, coupled with responses and design suggestions from CNR and equipment suppliers. It is understood that the design for any particular system or piece of equipment may not progress from one formal design phase to the next without having received formal approval from MBTA.

Following the design reviews, the appropriate drawings and engineering data will be corrected and updated and resubmitted to MBTA for acceptance. Critical drawings and data, such as general arrangement drawings and the weight analysis described in more detail in Section I.1e, will be regularly updated and reissued on a regular basis, to allow all parties to be completely up to date and familiar with the current vehicle configuration.

Mock-ups will also be constructed during the Detail Design Phase to act as a design aid to allow MBTA to readily visualize the car configuration. Samples of materials to be used on the vehicles will also be submitted to MBTA for approval during this phase of the design. In addition, all stress analyses will be submitted for MBTA's approval during the Detail Design Phase.

This entire process is iterative, and results in fully-integrated designs that meet the requirements of the Technical Provisions, and that have built-in consensus from all concerned parties.

## 1.12 SYSTEMS INTEGRATION

Below is the RFP requirement for the Systems Integrator:

MBTA RFP No. CAP 27-10 Requirement
Tab I.1 (I) Systems Integrator
<i>Identify the engineer proposed as the System Integrator, as required by T 21.03, and present the Systems Integration Plan referenced require in T 21.03.</i>

### 1.12.1 Introduction

The systems integration process ensures that all of the discrete elements between associated systems function properly together and that the systems as a whole interface correctly with their operating environment. To accomplish that, the vehicle designers must confirm that individual components and systems have been accurately specified, that interfacing requirements for the equipment and systems are known, accepted, and implemented by each interfacing supplier, that hardware can be physically and properly installed on the vehicle in accordance with the manufacturers' specifications, that individual systems are physically (electrically, mechanically, pneumatically, etc.) and functionally compatible, and that, when tested, the vehicle as a whole performs in accordance with the MBTA Technical Provisions and in accordance with MBTA's needs. This means that when tested on the MBTA Red and Orange lines, the vehicle must be able to successfully operate and must perform in accordance with MBTA's expectations.

It is the Systems Integrator's sole responsibility to oversee and control all aspects of the vehicle design integration process described above.

### **1.12.2 Scope**

CNR, generally, and the Systems Integrator, specifically, will control and monitor the systems integration functions during the vehicle design process, including participation in the execution and acceptance of all vehicle, system, subsystem, and component qualification testing. At the top level, this includes the external interfaces of the electrical and mechanical systems with the rolling stock and existing MBTA systems, including wayside equipment, communications command centers, and maintenance facilities. The scope also includes the internal interfaces between the various onboard vehicle electrical and mechanical systems.

The MBTA Red and Orange line vehicle project will be set up so that systems integration is performed as an integral part of the project organization and design advancement. The systems integration function is authorized by the Project Manager and reports directly to the Project Engineer. Systems integration, as a discipline, spans across all CNR systems engineers as well as all suppliers.

In support of the systems integration scope, CNR will, during the design process, initiate and control the following tasks.

- Establish a comprehensive Systems Integration Plan that outlines the framework for the interfacing scope and function by:
  - Establishing interface control criteria.
  - Supporting the project team during design reviews, qualification testing, first article inspections, and conditional acceptance of the first several vehicles on both the Red and Orange lines.
  - Establishing an interface verification process.
- Develop a verbal and written communications protocol.
- Develop an interface conflict resolution process.

### **1.12.3 Organization**

In keeping with the approach for the Pilot car development that will be done in China to utilize the experience and familiarity with CNR designs, CNR has assigned a senior Systems Integrator to oversee this stage in the Changchun facility. Referring to the organization chart shown in Section 1.1, CNR has designated Mr. Zhonghai Wang as the Systems Integrator. Mr. Wang has had several previous and successful experiences as a systems integrator on many previous projects for CNR. A paragraph of Mr. Wang's experience is included in Section 1.1, along with a matrix showing the Systems Integrator's responsibilities, physical location, and decision-making authority.

Subsequently, the Production car development will be completed in the Springfield facility. Therefore, CNR will assign an experienced American to fill the role of Systems Integrator at this location. This person will be the point of contact with the MBTA regarding all matters related to Systems Integration. Since the timing of production at the Springfield facility is still far away, this position has not been named yet; however, this position will be subject to MBTA approval.

The main focus of systems integration is to ensure that all functional areas, vehicle systems, and interfaces with wayside equipment and facilities have been fully identified, prioritized, and interconnected. Systems integration begins with the correct identification of project management and project development functions and relationships, including the departments of Project Management, Contract Administration, Engineering, Procurement, QA/QC and Testing and

Commissioning. Systems integration also ensures that all necessary resources and qualifications are timely applied and are working in a coordinated manner.

It is fundamental that these functions be properly staffed and interconnected and that clear authority, responsibilities, and accountability be assigned to each. The establishment of these relationships will facilitate the development, procurement, installation, and testing of all car systems and components.

As noted, the Systems Integrator will report to the Project Engineer, who reports directly to the local Project Manager. The Systems Integrator will review all drawings issued by CNR engineering and suppliers for critical interface aspects, including electrical, mechanical, and functional interfaces. The Systems Integrator will attend all design review meetings between MBTA, CNR, and CNR's suppliers and deal directly with the CNR's engineering department and with CNR's suppliers in addressing resolution of any integration issues. This function will be primarily coordinative as the Systems Integrator will be specifically checking for systems integration items. The Systems Integrator will provide direct input to project management for appropriate visibility of all interface issues.

Ultimately, CNR retains responsibility for the total system integration, interface management between systems, all aspects relating to performance at both car and train levels, design, including vehicle assembly, carbody structure and truck, and design and delivery time schedule management.

#### **1.12.4 Establishing the Interfaces**

A matrix (example shown below), defining all vehicle systems and major pieces of equipment, will be developed with the same systems, subsystems, and components being identified vertically and horizontally in the matrix. The responsible engineers will then review this matrix and identify the appropriate equipment/system interface for a particular system/equipment by placing a dot in intersecting box. For example, trucks would indicate an interface with, at least, the carbody, the braking system, the propulsion system, and the ATP/ASR system.

In addition to producing the systems integration matrix, the Systems Integrator, in concert with all CNR system engineers, will prioritize the vehicle systems based on criticality of function. This order of priority can then be applied to the subsets of related systems and components to establish a single parent system or device within each group. The parent entity and its associated system engineer will be recognized as the group lead for the purpose of communicating technical information. This process minimizes the risk of suppliers making costly mistakes due to erroneous assumptions and miscommunication. For example, the leveling time of an air spring system can be adversely affected by the pneumatic demands of other more critical pneumatic systems. In addition, the volume of reservoirs, size of piping and other system constraints can affect the time required to add pressure to the suspension and level the vehicle. In this instance, the design and selection of suspension components is dependent upon parameters dictated by the friction brake system and the friction brake system engineer should have lead responsibility for the group.

A final, comprehensive, matrix, complete with inter-group lead responsibility, will then be produced by integrating the inputs from all engineers. Refinements will be made to the final matrix by holding discussions with the individual engineers, and others, as required.

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The interface control documents and drawings will next be further refined during comprehensive meetings held between CNR (Systems Integrator) and the interfacing suppliers. As a prelude to the integration meetings and to assure that their equipment will function correctly in the vehicle, each supplier will be required to correspond with all other interfacing suppliers for the specific requirements of the other suppliers' equipment. Conversely, each supplier will be required to identify the interface requirements for all interfacing equipment to enable his equipment to function correctly in the vehicle. Where applicable, this information will include, but not be limited to:

- Equipment input requirements/tolerances.
- Equipment outputs and tolerances.
- Equipment electric power supply/power consumption requirements.
- Equipment pneumatic power supply/power consumption requirements.
- Equipment power supply circuit protection.
- Equipment mounting constraints.
- Equipment location constraints.
- Equipment servicing constraints.
- Equipment environmental constraints such as heat dissipation, cooling, and spray protection.
- Equipment EMC constraints.
- Segregation/Shielding requirements associated with equipment wiring.
- Equipment shock and vibration limits and dampening requirements.
- Equipment operational clearances.
- Equipment operational noise production.
- Equipment diagnostic interface requirements.
- Compatibility with existing equipment infrastructure such as locomotives, wayside, etc.
- Software requirements.
- System failure mode constraints.
- System bypass/cutout requirements.

Following the acceptance of an ICS and/or ICD by all involved parties, including the Systems Integrator, the documents will be signed by all participants and signed copies distributed.

#### **1.12.6 Controlling the Interfaces**

Approved ICSs and ICDs will be controlled by the Systems Integrator and may only be revised on authority of the Systems Integrator. The ICSs and ICDs cannot be changed without the approval and acceptance of the original signatories. This will assure that all critical interfaces will be tightly controlled and will not be changed without the express knowledge and consent of all concerned parties.

#### **1.12.7 Systems Integrator**

The primary responsibility of the Systems Integrator is to make sure that all systems are designed and tested so that the vehicles are properly assembled and will function as intended. To achieve

this goal, the Systems Integrator will identify the interface requirements, monitor the flow of information between all system groups and suppliers, and verify that the interface objectives have been satisfied. The participation of the Systems Integrator will be continuous throughout the project.

General systems integration responsibilities will include:

- Reporting the systems integration status to CNR's Project Engineer.
- Identifying the interface points, parameters, and requirements for systems integration.
- Producing and controlling the interface control documents (ICS/ICD).
- Reviewing drawings and inspection/test procedures developed by the CNR engineers and their suppliers for all interface items. Reviews will include electrical and mechanical interface and operational/functional interface and compatibility items.
- Attending design review meetings with MBTA, CNR, and CNR's suppliers.
- Participating in responses to and addressing systems integration concerns raised by the MBTA, CNR engineers, and CNR suppliers.
- Resolving systems integration issues.
- Coordinating systems integration through direct communication between CNR and CNR's suppliers.

While CNR's engineering manager is responsible for managing CNR's engineering department and its daily work orders and administration, the Systems Integrator is responsible for the status and completion of systems integration items for the project. In this capacity, the Systems Integrator provides input to the engineering team, reviews their work, and coordinates completion of systems integration tasks in accordance with the project's schedule.

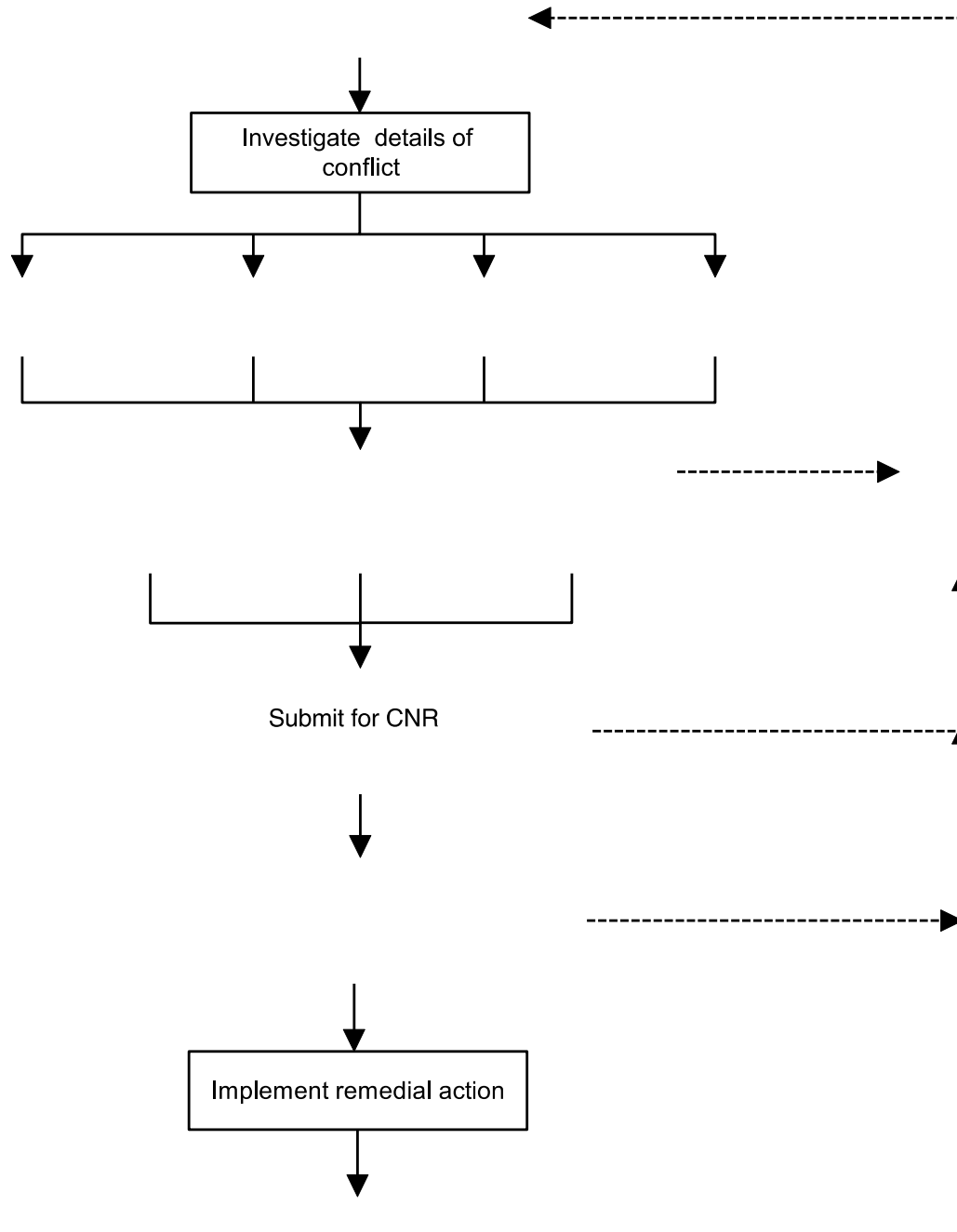
Specific responsibilities of the Systems Integrator include:

- Assisting with the RAMS effort.
- Verification of completeness and satisfactory interface of noise control, weight control, EMC engineering, software management, and related subcontractor information.
- Review of technical descriptions for adequate integration information.
- Verification of hard-mounted installation points between the vehicle and all components and between related components.
- Verification of electrical, mechanical, and pneumatic interconnections between the vehicle and components and between components.
- Resolution of interconnectivity issues.
- Reporting to the Project Engineer the status of the system integration effort.

### **1.12.8 Interface Conflict Resolution**

The Systems Integration process will be designed to identify areas where interface problems exist. Resolution of interface issues will take place using defined procedures. This process will include CNR, CNR's supplier, and MBTA interaction as necessary.

The following simplified flow chart illustrates the primary steps of the interface conflict resolution process.



### 1.13 CONCEPTUAL DESIGN DRAWINGS

Below is the RFP requirement for the Conceptual Design Drawings:

**Tab I.1 (m) Organization Chart, Resume and Responsibilities of Key Staff**

*Provide one (1) print each of the following conceptual designs for each car type (Orange, Red, Cab Car, Non-Cab Car): General Arrangement Drawings (Interior and Exterior); Floor Plans; Equipment Arrangement; Carbody structural Diagram; Truck General Arrangement Drawing; and Cab and Console Layout.*

The conceptual design drawings are included in Section 6 Appendix.

### 1.14 MOBILIZATION PLAN – QUALIFICATION TESTING

Below is the RFP requirement for the mobilization plan and approach for the dynamic vehicle qualification tests:

**Tab I.1 (n) Mobilization Plan for Dynamic Vehicle Qualification Testing**

*Describe the mobilization plan and approach for conducting the dynamic vehicle – level qualification testing required in Section T20 of the Technical Provisions. Provide a preliminary indication of test sequencing for the two fleets. Describe the methods by which on-going test results will be cycled through the design process to ensure that design modifications are implemented prior to the delivery of Pilot Cars. Describe how such design modifications are implemented into the ongoing manufacturing and assembly process of the production cars.*

Tests will be performed as part of the engineering activity in support of the Orange Line and Red Line vehicle projects, which will be in response to the MBTA's Technical Provisions, Part T 20.00 in particular. The baseline for the test program will be that required by the Technical Provisions (contractual tests), but this may be supplemented by additional tests required by CNR's Engineering Department. The full test program for the project will be summarized in the Master Test Plan, which will be developed during the proposal phase, or the early part of the design phase, by the Project Test Engineer. CNR normally carries out the following types of tests:

**Development Tests** - These are internal tests that may be required by Design Engineering to prove design concepts. These tests may be performed to demonstrate that a new or modified design is suitable for transit service, to demonstrate equipment reliability, or to isolate a failure mode. Frequently, prototype equipment and design concepts will be proven by Development Tests. These tests may also be referred to as Engineering Tests.

For this project, MBTA has no specific requirements for performance/submittal of Development Tests, including procedures and reports. CNR may prepare test procedures to help ensure that the test objectives are met and provide a means to control the costs of the test. By their nature, development tests are frequently informal, in that outcomes may not be clearly known beforehand. As a result, the full extent of the testing cannot always be covered in a procedure. Whenever a procedure is prepared, it is reviewed by the responsible engineer. Depending on the nature of the test, a report may not be required.

**Qualification Tests** - Qualification Tests are performed on a limited number of units during any production run, frequently only on one piece (component, system, vehicle, and consist), to



demonstrate performance, determine operating margins, and confirm the effectiveness of equipment tested. Reliability Tests are also classified as Qualification Tests. Qualification Tests are also referred to as Type Tests.

Qualification test procedures and reports will be produced by the Design Engineering Department, and the system or equipment engineer responsible for the equipment to be tested will be responsible for the test documents.

**Set-up Tests** - Set-up tests are carried out by the Production Test Department to set up equipment to be tested before conducting acceptance or other production tests. Generally, these tests calibrate or otherwise perform an initial, one-time set-up of the equipment under test. Set-up tests are used when the activity covered in them is not permitted within, or during, the acceptance test. Set-up test instructions are prepared by the Engineering Department when considered necessary by the responsible engineer or by mutual agreement with Production Test or Quality Test. Set-up tests may be applicable in preparing for Acceptance or Commissioning Tests. Generally, no report will be required as a result of performing the test.

**In-process Tests** - In-process tests are performed at an intermediate stage during the manufacture or assembly of equipment, which may later be subjected to an Acceptance Test. Process verification, such as weld quality, is usually classified as an In-process test. In-process test procedures are produced by the Quality Department. However, should the responsible engineer believe that an in-process test is appropriate to maintain the quality of the delivered product, the requirement for such is communicated to the responsible quality engineer and manufacturing engineer. The product or system engineer responsible for the equipment to be tested will approve the In-process Test Procedure, and when the test is intended for field use, the Field Service Engineer will also approve the procedure.

**Acceptance Tests** - Acceptance tests are performed on each piece of equipment or subsystem before shipment to demonstrate that it functions correctly. These tests may also be referred to as Routine, Functional, Shop, Production Conformance, or Factory Tests. Acceptance test procedures will be prepared by the Engineering Department and the tests may be carried out specifically for the project, may be component specific, or may be carried out using generic acceptance test procedures.

Acceptance tests will be performed by the Production Test Department.

**Commissioning Tests** - Commissioning tests are performed on each completed vehicle on the MBTA's property, to ensure that the vehicle running characteristics and functioning are in accordance with defined requirements. These tests may also be referred to as Vehicle Acceptance or Vehicle Running Tests. Commissioning Test procedures will be prepared by the Engineering Department. They will cover all tests required on a completed vehicle necessary to ensure that each vehicle is ready for acceptance by the Customer and is suitable for use in service. Commissioning Test procedures are prepared on a project-specific basis, and include all Customer requirements and any additional requirements considered necessary by CNR to ensure that a safe, fully operational vehicle is offered for Customer formal acceptance.

Commissioning Tests are normally performed by the Project Test Engineer and the Production Test Department, with oversight and support by the Quality Engineer.

All test procedures, except those for in-process tests, will be produced by the responsible system or equipment engineer. The Project Test Engineer will also assist in preparing test procedures. All test procedures, except those for in-process tests, will be validated by the Test Engineering staff. Any changes to the procedure must be approved by the responsible system or equipment engineer.

The Project Test Engineer will be responsible for the performance of Qualification Tests. This will include scheduling the test, coordinating participation by others in the test, and supervising the test activities. Reports for these tests will be prepared by the Test Engineer responsible for the test. Should a Supplier provide a test procedure or report, it will be converted to a CNR test document.

The Master Test Plan will define the scope of all testing required to be performed on the project and it contains the following information:

1. Item number.
2. Equipment description.
3. Test procedure number.
4. Test procedure title.
5. Type of test (Qualification, Acceptance, etc.)
6. Technical Provisions testing section reference.
7. Technical Provisions design section reference.
8. Reference information (industry test, FRA, AAR, NEMA, ASTM, AWS, etc.).
9. Summary of the test requirements.
10. Responsibility (CNR, subcontractor, independent test laboratory, etc.).

Following successful completion of all required testing at CNR's final assembly facility, cars will be shipped to the MBTA's facility for further Qualification and Commissioning testing. The testing will be carried out by CNR's Project Test Engineer and the Production Test Department under the guidance of CNR's Design Engineering Department with the oversight and support of the Quality Engineer. Generally, the testing of major systems and pieces of equipment will be carried out by the supplier of the system or equipment. It is expected that representatives from the MBTA will be in attendance during the testing and will facilitate the performing of the tests on MBTA property, and will be authorized to accept test results.

CNR's testing mobilization plan will be based on two major elements – the Master Test Plan and the Project Schedule. The Master Test Plan will define the scope of all testing required to be performed on the project and the Project Schedule defines the sequence of testing.

Should testing of the vehicles necessitate design changes to the equipment or systems to allow successful completion of the testing, the identification for the need for the change and the implementation of the changes will fall under CNR's Engineering Change Notice system. An approved Engineering Change Notice (ECN), which defines the revised equipment configuration and all required changes to implement this new configuration, must be issued before updated equipment can be accepted by CNR and can be installed on vehicles. The affected equipment in CNR's final assembly facility (and in the Changchun manufacturing facility, if applicable) and on vehicles having been shipped to the MBTA's property will then be immediately "red-tagged" by CNR's Quality department as being non-conforming. The "red tags" may only be removed by CNR's Quality department after the ECN has been implemented and the equipment has been brought into conformance.

Vehicles having already been shipped from CNR's final assembly facility to MBTA's property will require retrofitting to the new configuration, and the work will be carried out by CNR's Customer Service Department in accordance with an approved Field Modification Instruction referencing the approved ECN.

Changes to equipment that originate during the manufacturing process are handled in an identical manner.

Depending upon the arrangements made with the MBTA, basic (safety) testing of all married pairs (braking rate, acceleration performance, coupling, etc.) could take place at a single location before the vehicles are moved to the Orange Line and to the Red Line for line-specific testing, such as electro-magnetic compatibility, signaling system functionality, etc.

Following delivery of cars from CNR's final assembly facility to MBTA's property, Orange Line and Red Line cab and non-cab cars will be coupled to form married pairs. Testing will then be carried out to ensure the proper coupling (mechanical, electrical and pneumatic) of cars and the general functionality of the married pairs. Following these checks, the tests specified in Section T 20.23 of the Technical Provisions (On-Site Commissioning Tests on All Vehicles) will be carried out; namely:

- Parking Brake Tests
- Service Brake Rate Tests
- Emergency Brake Tests
- Propulsion System Tests
- ATP/ASR Tests

It is planned that the 500-Mile Operational Test, as outlined in Section T 20.23.07, will be conducted following completion of the testing specified in Section T 20.20 of the Technical Provisions (On-Site Qualification Tests on Pilot Cars).

The tests specified in Section T 20.20 (On-Site Qualification Tests on Pilot Cars) will be carried out, in approximately the following order. It should be noted, however, that some tests, such as "Mechanical Towing Compatibility with Existing Cars," "Vehicle Compatibility Tests with Authority Equipment," or "Inching Switch Test," could be carried out in parallel with other tests. It is also noted, that prior to dynamic testing on the Orange Line and Red Line, CNR would carry out a comprehensive clearance check at low speed to ensure that the vehicles remain within the clearance limits. As part of this clearance test, CNR would perform the "Coupler and Draft Gear Clearance Test" and the "Headlight and Inter-Car Barrier Verification."

- Dynamic and Friction Full Service Brake Tests
- Emergency Brake Tests on a 6 car train-set
- Propulsion System Tests
- Spin/Slide Control Capability
- Test of Slide Control During Emergency Braking
- Parking Brake Hold Test
- Roll Back Tests
- ATP/ASR Aspect Enforcement Tests
- ATP/ASR Test of Operational Modes
- Train-To-Wayside Emission Limits Tests
- Overspeed and Emergency Overspeed Response Time Verification
- Overspeed Limits
- Brake Assurance Rate
- Braking Resistor Temperature Rise Test

- Air System Tests
- Trainline Tests
- Collector Shoe Special Tools Testing
- Multiple Trainset Tests
- Noise And Vibration Tests
- Model Validation Test
- Journal Bearing Over-Temperature Indication Test
- Inching Switch Test
- Four-season HVAC Test
- Vehicle Monitoring System Test
- Mechanical Towing Compatibility with Existing Cars
- Vehicle Compatibility Tests with Authority Equipment
- Maintainability Qualification Testing
- Efficiency
- Reliability Testing

CNR's preference, however, would be to perform all non-Line specific qualification tests at its Changchun manufacturing facility, and to limit the tests performed on the Orange and Red Lines to those requiring the Orange and Red Line characteristics, such as ATP/ASR tests, Train-To-Wayside Emission Limits tests, and others. The scope of these tests will be mutually agreed with MBTA.

The On-Site Qualification Tests on Pilot Cars will be carried out in accordance with the requirements of the vehicle delivery schedule, which means that the Orange Line car testing will be carried out and completed prior to similar testing on the Red Line cars.

## 1.15 RELIABILITY

Below is the RFP requirement for the reliability of all major subsystems:

**Tab I.1 (o) Reliability Requirement**

*Describe how the Reliability requirement of T2.03 will be met and what methods the Offeror will undertake to ensure all major subsystem suppliers achieve this requirement.*

The requirements for Reliability are contained in Section T 2.03.02 of the Technical Provisions for vehicle Mean Distance Between Failure (MDBF), and Section T 2.03.03 for system and component Mean Distance Between Component Failure (MDBCF). The vehicle reliability will be designed to achieve the fleet availability requirements as detailed in Section T 2.03.04.

During the proposal phase, CNR carefully studies the agency's reliability requirements with respect to overall feasibility. Also during the proposal phase, CNR will, at a minimum, pass down the reliability requirements contained in the Technical Provisions to prospective sub-suppliers.

As required by Section T 2.03.06 B, within 90 days from Notice to Proceed, CNR will submit a Reliability Program Plan (RPP) for MBTA's review and approval (CDRL 02-07). The RPP will detail how CNR intends to satisfy all reliability requirements for the Orange Line and Red Line project, and will include the monitoring and control of subcontractors and suppliers, program review, the



Failure Reporting, Analysis, and Corrective Action System (FRACAS), the Failure Review Board (FRB), reliability modeling, reliability allocations, reliability predictions, component de-rating, thermal reliability, and reliability development/growth testing.

At project inception, CNR will assign an experienced, dedicated RAMS (Reliability, Availability, Maintainability, Safety) Engineer to the project, as per the requirements of Section T 2.03.06 C (CDRL 02-08). The RAMS Engineer will have the authority within the project organization to plan and implement the reliability program.

At the beginning of the design process, CNR will prepare a reliability prediction summary, using as a basis the requirements of Section T 2.03 of the Technical Provisions and CNR's past experience. During this process, it is possible that some sub-suppliers may not consider it feasible to meet the reliability requirement required by CNR. In such cases, it may be necessary for CNR to accept a lower-than-desired reliability, but it will then be necessary for CNR to impose a more restrictive reliability requirement on other equipment and systems in order to meet the vehicle MDBF requirement. In no case will the MBDCF requirements be less than those specified in Section T 2.03.03. The completed report will be submitted to MBTA to satisfy the requirements of Section T 2.03.05 A (CDRL 02-06) during the Preliminary Design Review.

CNR will develop a reliability model, consisting of reliability block diagrams and probability of success equations, which show each equipment element essential to the successful performance of the system, including element interrelationships. These block diagrams will be kept current with design iterations.

As required by Section T 2.03.05 B, CNR will perform reliability analyses to identify weaknesses in system hardware and software design whenever these details are not established by historical records of equipment operation. The analyses will provide input to system designs for theoretical circuit behavior, random component failures, electrical interference, systematic component failures, and software errors in software-based logic. The reliability predictions will be identified through the use certified field failure data, or MIL-HDBK-217, when no field data is available. As also required by Section T 2.03.05 B, IITRI/RAC Document NPRD-95 will be used for non-electronic components. CNR will perform a Failure Modes Effects and Criticality Analysis (FMECA) for subsystems to identify weaknesses in safety critical system hardware/software design and to document the modes and effects of failures. The analyses will be updated throughout the development of the vehicle design.

FMECA is an inductive, bottom-up analysis method which analyzes the effects of single component or function failure on equipment or subsystems, and while FMECA is very effective at thoroughly documenting initiating faults and identifying their local effects, it is limited at examining multiple failures or their effects at a system level. Fault Tree Analysis (FTA), on the other hand, is a deductive, top-down method that analyzes the effects of initiating faults and events on a system. It is very effective at showing how resistant a system is to single or multiple initiating faults, but it is not very effective at finding all possible initiating faults. FTA considers external events, whereas FMECA does not. CNR may also supplement these analyses by utilizing FTA for these reasons.

One of the design techniques that CNR will consider to improve reliability and to reach reliability targets is redundancy. In the case that one part of a system were to fail, an alternative success path will be provided. Redundancy is particularly useful when field reliability data is not available. Although redundancy can be more expensive, high reliability can be readily achieved. In addition, by incorporating different backup designs into the system (multiple suppliers, reduced infant mortality sensitivity), high levels of reliability can be achieved throughout the life cycle.

As required by Section T 2.03.05 C, the reliability prediction report will be maintained and updated through the design, testing, manufacturing, delivery and warranty periods, and will be submitted to MBTA for review and approval on a monthly basis. Any design or manufacturing changes that could affect vehicle reliability will be highlighted in the report.

At least 60 days prior to the start of pilot car testing, CNR will establish a FRB in accordance with MIL-STD 785B. The FRB will be responsible for reviewing all system and component failures to determine their relevance to overall vehicle reliability. The FRB will also determine the need for, and the type of, failure analyses and corrective action. Representatives from CNR's Engineering Department including the RAMS Engineer, Manufacturing, Customer Service, Field Service, Quality Assurance, and others, as required, will participate in the FRB. It is also expected that the MBTA will be an active participant in the FRB.

As required by Section T 2.03.07 A, before the Pilot Train is accepted by MBTA, the vehicles will need to successfully complete the Pilot Train Reliability Test (CDRL 02-09).

Following the delivery of the 30th car from each fleet, in accordance with Section T 2.03.08 A each fleet will undergo the Fleet Reliability Demonstration Test to confirm that the vehicles and their systems meet the specified reliability and availability targets. Prior to testing, CNR will submit its FRACAS implementation plan to MBTA for acceptance (CDRL 02-10).

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## 2 MANUFACTURING PLAN

The vehicles for the MBTA's Orange Line and Red Line will be designed, built, and delivered by CNR, one of the largest and most advanced railcar builders in the world and the largest of the premier railcar builders in China. CNR has developed and constructed its own railcar designs as well as worked in close cooperation with, and under license to, some of the world's leading rail vehicle designers and manufacturers, including Alstom, Bombardier, Siemens, Tokyu Car and Hitachi. This experience has provided CNR with invaluable knowledge of many different vehicle technologies and manufacturing methods and places CNR in the unique position of having the knowledge, skills and capability to produce a wide range of world-class vehicles to international standards for varying markets. CNR's plan to manufacture MBTA's vehicles has been carefully developed and steps have already been taken to ensure its timely and successful implementation as described in this section.

### 2.1 MANUFACTURING CAPACITY AND LOGISTICS

Tab I.2 (a) Manufacturing Capacity and Logistics

*The Plan should address the manufacturing capacity and logistics for the production of the Red Line and Orange Line Vehicles. It should include the overall approach to manufacturing and assembly of car body components, testing and commissioning, the availability plant capacity at the various locations, qualified and, where applicable, certified personnel and other resources to perform the work, including the local on-site staff, the methods of transportation between the various work locations as well as to the Authority, and the Offerors' plans or local coordination with, and support to, the Authority, and all efforts will undertake to comply with the obligation in Section C7.18 that Final Assembly of All Production (Non-Pilot) Vehicles delivered under the Contract take place in Massachusetts.*

#### 2.1.1 General

In accordance with the RFP, CNR will manufacture, assemble and pre-test the first three married pairs of each car type, the Pilot cars, in their entirety in CNR's manufacturing facility in Changchun, China. This means that all material, including US-manufactured components, will be shipped to Changchun for incorporation into these vehicles. The trucks for the Pilot cars will likewise be assembled completely in Changchun. The Pilot cars will be fully-protected and transported by ocean freight to Boston, Massachusetts, and then by flatbed truck to the MBTA's property for commissioning and qualification testing.

For the production cars, the stainless steel carbodies will be fabricated in the Changchun facility. The production carbodies will be transported to Boston via ocean freight, and then by flatbed truck to CNR's final assembly facility in Springfield, Massachusetts.

At its Massachusetts final assembly facility, CNR will perform final assembly and pre-testing of the production cars. Final assembly will consist of installing all underfloor and roof-mounted equipment including propulsion equipment, auxiliary power supply equipment, braking system, couplers and draft gear, HVAC equipment, ATC system equipment, and other systems, passenger seats, stanchions and hand rails, cab equipment, and all miscellaneous equipment installed on the carbodies. The trucks will likewise be completely assembled and tested in Massachusetts. Finally, completed carbodies will be mounted over the trucks, followed by comprehensive static testing and dynamic testing at our on-site test track at the Springfield facility.

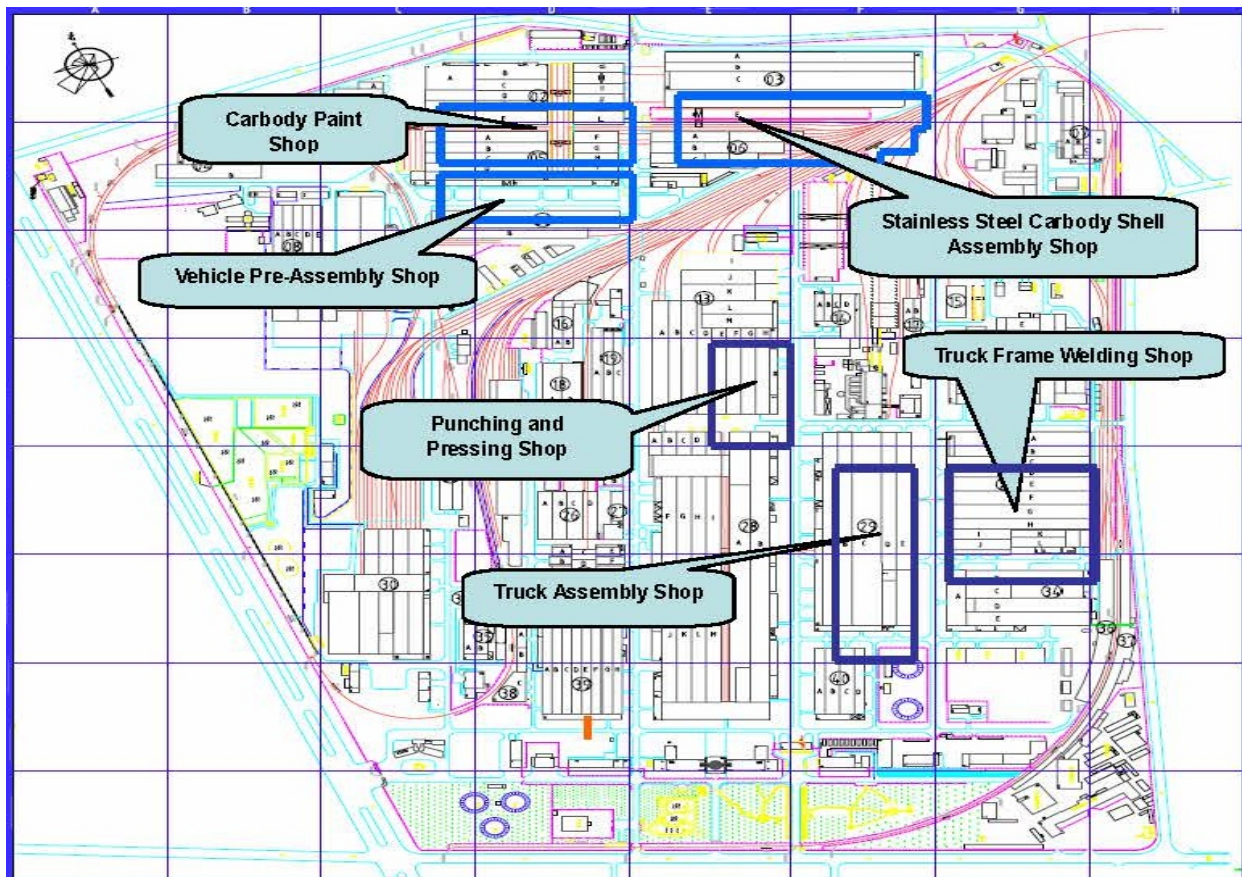


Completed tested production cars will be transported from the Massachusetts final assembly facility to MBTA's property by flatbed truck. This Springfield facility has the additional ability to make shipments directly by rail to the Orange Line. This alternative has not been pursued in accordance with Addendum 3 instruction to ship by (flatbed) truck, however this alternative exists if it would be of benefit to MBTA.

### 2.1.2 CNR's Changchun Manufacturing Facility

The Changchun manufacturing facility covers a total area of approximately 872,000 ft<sup>2</sup> (81,000 m<sup>2</sup>), of which 270,000 ft<sup>2</sup> (25,000 m<sup>2</sup>) is used for the fabrication of components for carbody, 366,000 ft<sup>2</sup> (34,000 m<sup>2</sup>) is used for the assembly of carbody, 161,000 ft<sup>2</sup> (15,000 m<sup>2</sup>) is taken up by the Paint Shop, and 75,000 ft<sup>2</sup> (7,000 m<sup>2</sup>) is used for pre-assembly work. A layout of the Changchun facility and primary shops is shown below.

The Changchun facility can produce 1,200 mass transit vehicles per year.



**Layout of Changchun Manufacturing Facility**

The 366,000 ft<sup>2</sup> (34,000 m<sup>2</sup>) area dedicated to carbody assembly work is capable of supporting four production lines, with each production line able to simultaneously manufacture four different types of car shells. The facility has the capability to produce **1,000 stainless steel carbodies annually** and is a world-class facility and the largest facility of its kind in China. It has already manufactured over 5,000 stainless steel carbodies for rail vehicles operating around the world.

The fabrication and welding of the carbon steel and stainless steel portions of the carbodies will be carried out in separate areas to prevent carbon steel contamination of stainless steel components. The carbon steel end underframe components, including collision post reinforcements, will be cut to size and profile, machined, and then pressed to shape. Components and welded subassemblies will be installed into dedicated welding fixtures and fusion welded. Complete end underframe units will then be shot blasted to remove extraneous surface contamination, and prime painted, undercoated and finish coated. Areas within 2.95 inches (75 mm) of edges to be welded directly to the stainless steel portion of the car underframes will be masked to ensure they are not painted in order to accommodate subsequent welding operations.

Stainless steel components will be produced by cutting raw materials to size and shape, and then pressing and stretch forming, as appropriate for each part. Window and doorway cutouts in side sheets will be laser cut. Components and spot-welded subassemblies will then be installed in their respective fixtures: which are the roof frame fixture, left and right hand sideframe fixtures, end frame fixtures, and underframe fixture. The sideframe assemblies, end frame assemblies, roof frame assembly and underframe assembly will be formed by welding the components together. Generally, spot welding and fusion welding will be used, but areas visible to the riding public from station platforms will be laser welded. The stainless steel portion of the underframe will be loaded into the final assembly fixture with the carbon steel end underframes, and the subassemblies will be joined by fusion welding. The sideframe assemblies, end frame assemblies and roof frame assembly will then be installed in the final assembly fixture where they will be welded together (by spot welding and fusion welding) to form an integral carbody structure. Pertinent portions of the carbon steel end underframes will be primed, undercoated and finish coated as necessary.

Welds visible to passengers from the station will be laser welded.

Following completion of all welding, welded seams in the passenger compartment skins will be leak tested. Any required repairs will be made and re-tested to confirm watertightness of each carbody.

Approximately 86,000 ft<sup>2</sup> (8,000 m<sup>2</sup>) of floor space is devoted to the manufacture of fabricated truck frames and bolsters. This area includes six welding production lines, five assembly lines, and two painting lines, and is capable of producing over 6,000 trucks per year. The production lines include numerous robotic welders, machining centers, 3-D measuring equipment, and static load testing and specialty equipment.

The truck proposed by CNR for the Orange and Red Line cars utilizes cast frames and bolsters supplied by Bradken (formerly known as Atchison Casting Corporation). Bradken has designed and manufactured over 5,000 railway passenger trucks since 1961 and more than 90,000 locomotive trucks since 1936. These trucks have provided millions of miles of safe and highly reliable service for many long distance and commuter rail transit agencies in North America.

The pilot car trucks will be assembled in the Changchun facility.

CNR has the additional capability of designing and manufacturing trucks with fabricated truck frames and bolsters in its Truck Shop. These capabilities including equipment and skilled staff will be utilized to aid in the assembly of the Bradken cast trucks.

The following images show some of the various shops and equipment in the Changchun manufacturing facility.

## CNR Changchun Plant Photos



**Main Assembly Facility**



**Overhead Walkway for Roof Access**



**Vehicle Access Walkways**





**Water Test Facility**



**Car Weighing Track**



**Spot Welding a Sideframe Subassembly**





**Automatic Spot Welding of Sideframe Sheets**



**Automatic Seam Welding of Corrugated Roof Sheets**



**Laser Welding Machine**



**Robotic Welding Machine Welding Truck Sideframe**



**Truck Loading Machine**

The final assembly area consists of 30 fixed stations with a separate track onto which the trucks are run for trucking. All car assembly work is carried out in a single station, and on completion of the carbody, it is removed from the assembly station by overhead cranes and lowered onto its trucks on the trucking track. The car is then moved out of the final assembly area on the truck track.

CNR's Changchun facility employs a skilled staff of over 10,000 workers to accomplish the production rates described above. All shops are fully equipped and staffed for construction of the Orange and Red Line cars. At the time of anticipated contract award for the Orange Line and Red Line cars, no work is currently scheduled for the manufacture of other rapid transit vehicles in the Changchun facility, ensuring there will be far more than ample factory capacity for the manufacture and assembly of the Orange Line and Red Line vehicles.



### 2.1.3 CNR's Massachusetts Final Assembly Facility

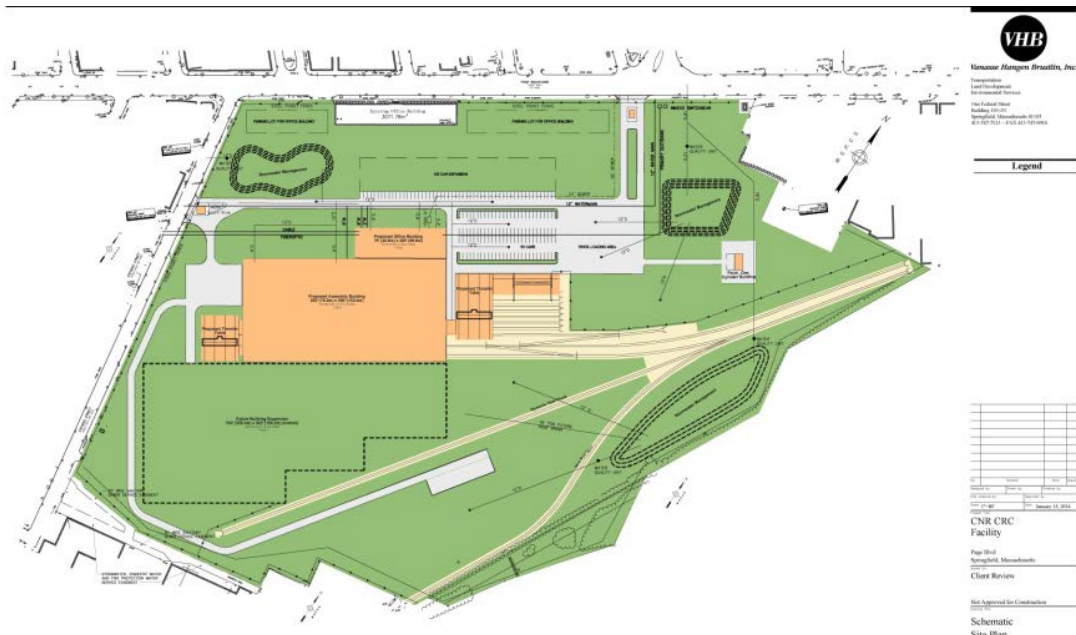
CNR has taken action to construct a brand new U.S. final assembly facility at 655 Page Boulevard, Springfield, Massachusetts.

CNR has arranged to build a new final assembly facility in Springfield, MA.

The following pages provide an aerial view of the land, a site plan, a three-dimensional visualization of the plant, and a plant layout of the Springfield facility.



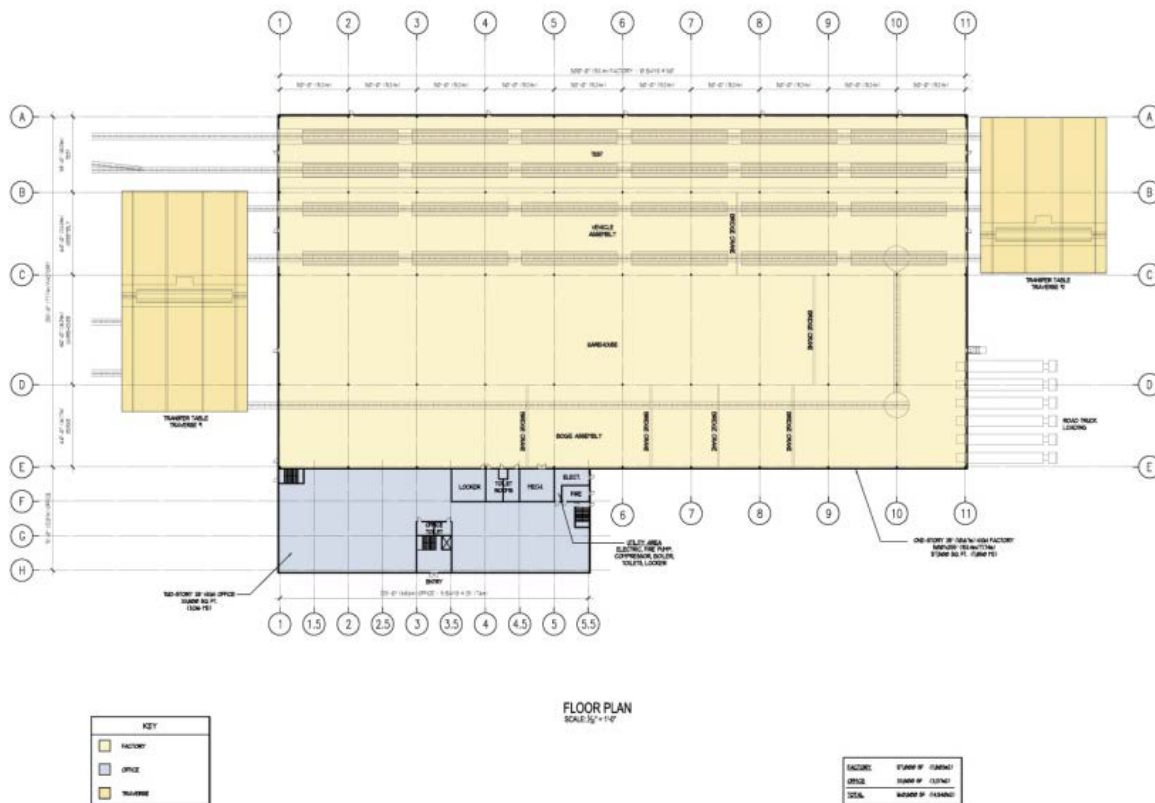
**Aerial View of Springfield Final Assembly Facility**



**Site Plan of Springfield Final Assembly Facility**



**3-D Visualization of Springfield Final Assembly Facility**





### Springfield Final Assembly Facility Layout

The site is shovel-ready and covers an area of 40 acres (161,800 m<sup>2</sup>) which will include vehicle production facilities and a test track, as well as office space and parking. The following visualization shows a view of the main assembly shop looking from west to east.



**3-D Visualization of Springfield Main Assembly Shop**

All equipment delivered to the final assembly facility, including equipment manufactured by CNR and by suppliers, will pass through Receiving Inspection where it will be inspected to ensure that it complies with all pertinent requirements before being released to either the Warehouse or to the Manufacturing Workshop. Noncompliant material will be quarantined to prevent its inadvertent use before being dispositioned in accordance with CNR's Quality Assurance procedures. If the material can be restored to compliance with specifications by CNR or the supplier on site, it will be rectified and moved to the Warehouse; otherwise, it will be returned to the supplier for correction.

CNR will use truck frames, bolsters and other components supplied by Bradken supplemented with the remaining components provided by CNR. For the production vehicles, the unpacked and inspected truck frames and bolsters will be moved into the Truck Shop. The chevron primary suspension will be installed on the truck frames, and the frames mounted on the wheelset assemblies which are complete with gearboxes and journal bearings. Traction motors will be installed on the truck frames and connected to the gearboxes using flexible couplings. The truck bolster will then be installed on the truck frame and the air springs mounted. Truck assembly will be completed by installation of tread brake units, brake piping and hoses, trip cocks, current collector equipment, power cabling, grounding cables, speed sensors, control wiring, ATC system equipment, car leveling valves and other items.

After the truck has been assembled, a number of truck tests will be performed. The truck will be subjected to a vertical load test to ensure that the primary springs are properly adjusted and secondary spring height is correct, electrical resistance of electrical connections will be checked, a leakage test will be performed on pneumatic piping and hoses, wire and cabling checked for continuity and megger and hipot tested, voltage will be applied to the traction motors to ensure the power cables are connected to the correct terminals, and other checks will be performed.

Carbody and other equipment will be delivered to the manufacturing facility at the east end of the main assembly shop (left side when viewing the previous three-dimensional image). Each carbody will be lifted from the flatbed truck using the gantry cranes shown in the image, and loaded onto dummy shop trucks. The carbody on its dummy trucks will then be moved onto the transfer table and transported to the main assembly shop.

Two final assembly lines will be utilized, each having six build stations, with the cars moving through the main assembly shop from east to west. The following work will be performed in each station:

- ❖ **STATION 1**      Installation of diagnostic equipment, door system, operator cab electrical lockers, ATP and ASR equipment, and communication equipment.
- ❖ **STATION 2**      Installation of roof-mounted HVAC units, passenger compartment electrical lockers, roof equipment wire and cable and connections, braking system equipment, cab electrical equipment.
- ❖ **STATION 3**      Installation of air ventilation ducting (including air tightness testing), passenger compartment wiring and connections, passenger seats, and other equipment.
- ❖ **STATION 4**      Installation of cab equipment, cab door, miscellaneous passenger compartment equipment, propulsion system equipment, hostler panel, auxiliary power supply equipment, battery box, and other equipment.
- ❖ **STATION 5**      Connection of underfloor electrical equipment, installation of couplers, ATP antenna assembly, lighting equipment and signage.
- ❖ **STATION 6**      Installation of trucks; dimensional checking.

Truck installation to the carbody will be accomplished by lowering the carbody onto the fully assembled trucks with the final carbody-to-truck connections made as well as attachment of the leveling valve arm to the bracket on the carbody.

After Station 6, the car will be moved onto the transfer table on the west side of the main assembly building and transported into the static test area. Here, the car will undergo car leveling to adjust the leveling valves to level the car within the prescribed tolerances. underfloor clearance test, wire and cable testing (continuity, megger, hipot), electrical equipment functional testing, pneumatic system response time test, functional testing of door system, communications equipment, ATP and ASR, and other tests.

Following the successful completion of all static testing, cars will be coupled and married pairs moved to the electrified test track for preliminary dynamic testing, including braking rate, acceleration, functional test of no-motion system, traction control system, and testing and measurement of other items.

Hold points will be established throughout the production line in conjunction with the MBTA to enable MBTA inspectors to fully inspect each phase of completed work. Details about the inspection program are provided in Section 4 Quality Assurance Plan in this proposal.

The facility will have the capability of producing 12 cars per month. This provides more than ample capacity to supply the 4 cars per month for each Line's delivery rate in accordance with schedule requirements.

Following preliminary acceptance of vehicles at the factory, the vehicles will be transported to MBTA's property on flatbed trucks, where a series of commissioning and acceptance tests will be conducted. These tests will be performed by CNR Field Service technicians in conjunction with MBTA and supplier test engineers, as necessary. Following successful completion of these tests, the vehicles will be presented to MBTA for formal acceptance.

The MBTA and its representatives will have full access to all of CNR's manufacturing facilities, both in China and in Massachusetts. CNR will establish points of contact for the MBTA within CNR's organization. The primary point of contact will be the Project Manager, but secondary points of contact will be the Deputy Project Manager, Project Engineer, Quality Assurance Manager, Production Manager and Product Support Manager. The points of contact will be mutually agreed upon by the MBTA and CNR.

Detailed staffing information is provided in Section 2.6 herein.

## 2.2 FINAL ASSEMBLY REQUIREMENTS

**Tab I.2 (b) Final Assembly Requirements**

*If the Offeror's anticipated final assembly operations, processes and measures it will use in connection with the Production Vehicles delivered under the Contract differ from or do not include at a minimum all operations, processes and measures listed in the definition of Final Assembly in Section C7.18, describe how the Offeror's final assembly will differ from the final assembly requirements in Section C7.18 and explain why the Offeror believes that its final assembly satisfies the general requirement of final assembly of all Production Vehicles in Massachusetts. OFFERORS ARE ADVISED THAT A PROPOSAL WHICH INCLUDES A MANUFACTURING PLAN WHICH DESCRIBES A MASSACHUSETTS FINAL ASSEMBLY PROCESS WHICH DOES NOT INCLUDE AT A MINIMUM ALL OF THE OPERATIONS, PROCESSES AND MEASURES LISTED IN THE DEFINITION OF FINAL ASSEMBLY IN SECTION C7.18 MAY BE REJECTED BY THE AUTHORITY AS NONCOMPLIANT. THE MBTA RESERVES THE RIGHT, ON A CASE BY CASE BASIS, TO DETERMINE WHETHER THE OFFEROR'S FINAL ASSEMBLY SATISFIES THE GENERAL REQUIREMENT OF SECTION C7.18 THAT FINAL ASSEMBLY OF ALL PRODUCTION VEHICLES TAKE PLACE IN MASSACHUSETTS.*

CNR confirms that all final assembly work described in Section C7.18 of the RFP will be performed in the Massachusetts final assembly facility.

## 2.3 WORK DONE BY PRIME CONTRACTOR

**Tab I.2 (c) Work Breakdown**

*List the work to be performed by the prime contractor and the location(s) at which this work will be performed. If major carbody manufacture is to be performed by subcontractors, identify by name and work locations.*

The Pilot cars for both the Orange and Red Lines will be manufactured and assembled in their entirety in CNR's manufacturing facility in Changchun, China. This will allow direct support and supervision by design engineering, manufacturing engineering, Quality and other groups that are familiar with the product designs, manufacturing methods, and acceptance criteria.

For the production vehicles, the stainless steel carbodies will be fabricated and assembled in the Changchun facility. The carbodies will then be shipped to CNR's Massachusetts final assembly facility for final assembly and testing of the completed vehicles.

CNR is not planning on manufacturing other components.

## 2.4 MASSACHUSETTS FINAL ASSEMBLY CONTRACTOR

Tab I.2 (d) Massachusetts Final Assembly Contractor

*List the Massachusetts final assembly contractor and location. Include sample assembly procedures and controls and sample material control program. Describe the group responsible for preparation of workflow plans, schedules, procedures, quality control, material control, etc., at the final assembly location. Describe how and where retrofit work might be performed if Authority facilities are not available. If more than one contractor is being considered, provide information for each.*

CNR is planning to establish a final assembly facility at 655 Page Boulevard, Springfield, Massachusetts. The facility organization will, in many respects, mirror that of CNR's manufacturing facility in Changchun. However, the U.S. facility will be under the control of the Project Manager, who will manage the following functions:

- **Manufacturing** – The Production department is responsible for the assignment of adequate skilled labor, issuing of required tools, and performance of all manual work on the vehicles in accordance with project technical, quality and schedule requirements.
- **Manufacturing Engineering** – Manufacturing Engineering is provided by the Engineering department for transferring the design engineering documentation into processes and procedures to be implemented by the workforce.
- **Quality Assurance/Quality Control (QA/QC)** – The QA/QC department is responsible for establishing and implementing all in-plant processes necessary to maintain product and process quality. This includes receiving inspection, in-process inspection, supplier auditing, first article inspections, auditing of in-house shop floor documentation, and conducting many other activities pertaining to Quality. Note that while the Quality department will work with the Project Manager in scheduling and performing daily work, Quality staff has authority directly from the corporate Quality Director.
- **Scheduling** – Scheduling is performed by the Project Planner who is responsible for issuing and maintaining the master schedule and its timely updates/adjustments.
- **Procurement** – The Procurement department is responsible for ordering material in conformance to the technical specifications from qualified and approved suppliers in support of the production schedule.
- **Material Control** – The Material Control department is responsible for the storage of all material, issuing material to work stations on the production lines, maintaining adequate material quantities, and other material handling activities.
- **Plant and Machinery** – The Facility Maintenance department is responsible for installing and maintaining all machinery within the facility.
- **Environmental & Safety** – The Environmental & Safety department is responsible for ensuring that the facility complies with all applicable health and safety regulations, necessary safety devices and equipment are available and in working order, and on-site




staff and visitors are properly trained in matters relating to safety and have been provided with requisite safety equipment.

- **Human Resources** – The Human Resources department is responsible for the recruitment and hiring of all site staff, ensuring that personnel comply with state and local regulations, and for maintaining personnel records.
- **Accounting** – The Accounting department is responsible for all financial and cash flow operations in accordance with Generally Accepted Accounting Practices, and maintaining all financial records.

Samples of CNR procedures and documents are provided on the following pages as required by the RFP instructions.

The coupler installation procedure for the Rio de Janeiro Electrical Multiple Units is shown below. (Some sample documents have been reduced in size in order to fit within the specified page limits.)

IN-700BG-004V2.0



**Process Sheet**

CCY-061-001-2011

Document No.	KZ-BXEMU60-ZP-013	Part Name	Coupler Installation
Document Name	Coupler Installation Procedure	Part Drawing No.	CCD00000103311
Product Type	Stainless Steel Urban Railway Vehicles	Applicable Model	DK130/DK130A/DK131
Project Name	Rio de Janeiro 60 EMU Project	Revision	B Effective Date 2014-01-26

Change Log			
Rev.	Signed	Date	Comments
A	Zhang Xu	2013.9.1	First issue
B	Zhang Xu	2014.1.24	Add coupler stop installation and coupler hose connection, etc.

Prepared	Checked	Department Leader	Countersigned	Approved
Zhang Xu	He Zhijun	Li Xuekun	Sun Qingfeng	Wang Junsheng
Implementing Department(s)				
Assembly Workshop	Quality Assurance Department			





Changchun Railway Vehicles Co., Ltd.

Sample Document  
From Similar Project



**Process Sheet**

CCY-061-002-2011

Document Name	Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Installation Procedure	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
Personal protection equipment (PTE)	 必须戴防护手套 Protective gloves must be put on	 必须穿防护鞋 Protective footwears must be put on	 必须穿工作服 Work clothes must be put on	 必须戴工作帽 Work cap must be put on	
Applicable station	10-30	10-30	10-30	10-30	
Personal protection equipment (PTE)					
Applicable station					
Change Log			Signed	Date	
			Prepared	Zhang Xu	Page
			Checked	He Zhijun	1/10



**Process Sheet**

CCY-061-003-2011

Document Name	Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Installation Procedure	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
<p>Work Flow Process</p> <p>10 Preparation work-----20 Installation of fully automatic coupler and draft gear -----30 Installation of semi-permanent coupler and draft gear</p>					
Change Log			Signed	Date	
			Prepared	Zhang Xu	Page
			Checked	He Zhijun	2/10

**Sample Document  
From Similar Project**

Page 2-16

[illegible]





**Process Sheet**

CCY-061-029-2011

Document Name	Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Installation Procedure	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
Station No.	Picture/Sketch	Process Content	Tools & Auxiliary Materials		
20		20 Installation of fully automatic coupler and draft gear 20.1 Use the overhead travelling crane or hydraulic lift car to transport the qualified fully automatic couplers onto the installation position.	Torque wrench Socket Sign pen		
20		20.2 After having aligned the fully automatic coupler with the carbody installation hole, tighten it with fasteners (without using torque wrench); when tightening the bolts and nuts, it is to use the diagonal tightening method. After having checked the coupler installation level, use the torque wrench to tighten it to the torque of 1825Nm, and apply lock tag (Apply lubricating grease RIVOLTA G.W.F during bolt installation). Note: Under conditions without wind and rain, power, the electric connector and fully automatic coupler shall be guaranteed in the closed state and cannot be changed artificially.			
			Prepared	Checked	Page
				Zhijun	6/10


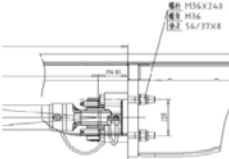
**Sample Document  
From Similar Project**



**Process Sheet**

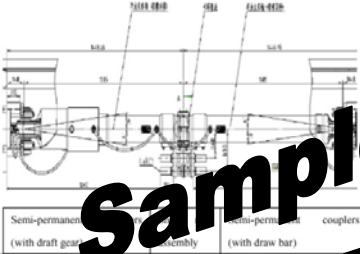
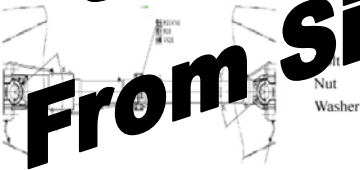
CCY-061-029-2011

Document Name	Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Installation Procedure	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
Station No.	Picture/Sketch	Process Content	Tools & Auxiliary Materials		
20		20.3 Use fasteners (cylindrical socket head screw M8x30, etc.) to fix up the coupler stop on both coupler installation sides, and apply the lock tag. 20.4 Use the open-end wrench to connect the master air pipeline hose, trainline hose, and uncoupling solenoid hose; and complete the connection between the fully automatic coupler and the underframe brake pipeline; after having satisfied the pressure test requirements, apply lock tags on all hose connectors.	Open-end wrench, Socket head wrench Sign pen		
20		Note: No interference is allowed either between hoses or between hose and other portions; when horizontally swinging the fully automatic coupler to the limit position, observe the hose state and avoid occurrence of flat hose, unsmooth ventilation and other phenomena caused by too small bending radius of the hose. After completion of coupler installation, complete a series of the coupler tests according to the requirements of the coupler test program.			
			Prepared	Checked	Page
				He Zhijun	7/10
Change Log			Signed	Date	

Document Name		Product Type	Project Name	Part Drawing No.	Part Name	Document No.												
Coupler Procedure	Installation	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013												
Station No.	Picture/Sketch		Process Content		Tools & Auxiliary Materials													
30	 <table border="1"> <tr> <td>End B</td> <td>End A</td> <td>End B</td> <td>End A</td> <td>End A</td> <td>End A</td> </tr> <tr> <td>T (Car 3)</td> <td>Mc (Car 4)</td> <td>Semi-permanent coupler (draft draw gear)</td> <td>Semi-permanent coupler (draft draw gear)</td> <td>Semi-permanent coupler (draft draw gear)</td> <td>Semi-permanent coupler (draft draw gear)</td> </tr> </table>		End B	End A	End B	End A	End A	End A	T (Car 3)	Mc (Car 4)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)	<p>30.1 Use the overhead traveling crane or hydraulic lift car to transport the qualified semi-permanent couplers and draft gear onto the installation position. Note: the semi-permanent couplers and draft gear is divided into the semi-permanent couplers (with draft gear); and the semi-permanent couplers (with draw bar).</p>			
End B	End A	End B	End A	End A	End A													
T (Car 3)	Mc (Car 4)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)	Semi-permanent coupler (draft draw gear)													
30	 <p>Bolt Nut Washer</p>		<p>30.2 After having aligned the semi-permanent coupler with the carbody installation hole, tighten it with fasteners (without using torque wrench); when tightening the bolts and nuts, use the diagonal tightening method. After having checked the coupler installation level, use the torque wrench to tighten it to the torque of 1830Nm, and apply lock tag (Apply lock tag to the RIVOLTA G.W.F during bolt installation).</p>		<p>Torque wrench Sign pen</p>													
Change Log			Signed	Date	Prepared Zhang Xu	Page 8/10												

Document Name		Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Procedure	Installation	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
Station No.	Picture/Sketch		Process Content		Tools & Auxiliary Materials	
30			<p>30.3 Use the open-end wrench to connect the master air pipeline hose, trainline hose; and complete the connection between the semi-permanent coupler and the underframe brake pipeline; after having satisfied the pressure test requirements of the brake pipeline, apply lock tags on all hose connectors.</p>		<p>Open-end wrench Sign pen</p>	
30			<p>Note: No interference is allowed either between hoses or between hose and other portions; when horizontally swinging the semi-permanent coupler to the limit position, observe the hose state and avoid occurrence of flat hose, unsmooth ventilation and other phenomena caused by too small bending radius of the hose. After completion of coupler installation, complete a series of the coupler tests according to the requirements of the coupler test program.</p>			
Change Log			Signed	Date	Prepared Zhang Xu	Page 9/10

**Process Sheet** CCY-061-029-2011

Document Name	Product Type	Project Name	Part Drawing No.	Part Name	Document No.
Coupler Installation Procedure	Stainless Steel Urban Railway Vehicles	Rio de Janeiro 60 EMU Project	CCD00000103311	Coupler Installation	KZ-BXEMU60-ZP-013
Station No.	Picture/Sketch		Process Content		Tools & Auxiliary Materials
30	 <p>Semi-permanent couplers (with draft gear assembly)      Semi-permanent couplers (with draw bar)</p>		<p>30.4 During vehicle coupler installation, use semi-permanent coupler and draft gear to connect the semi-permanent coupler (with draft gear) and the semi-permanent coupler (with draw bar); the tightening torque is 300±10Nm, and use the torque wrench to check the torque. Fill the grease AUTOLUB OP 2000 on the coupler lock tag. Fill the grease AUTOLUB OP 2000 on the coupler installation snap rings.</p>		Torque wrench
30	 <p>Nut      Washer</p>		<p>30.5 The coupler is allowed either between hoses or between other portions; when horizontally swinging the semi-permanent coupler to the limit position, observe the hose state and avoid occurrence of flat hose, unsmooth ventilation and other phenomena caused by too small bending radius of the hose. After completion of coupler installation, complete a series of the coupler tests according to the requirements of the coupler test program.</p>		
Change Log			Signed	Date	<div>Prepared <b>Zhang Xu</b> Page</div> <div>Checked <b>He Zhijun</b> 10/10</div>

A sample material control document for material receiving inspection is provided on the following pages as requested by the RFP instructions.

**SM-320BG-001V2.0**


**Description List of Processes PMC-230V2.0★**

A. Process Summary		Incoming material receiving and inspection processes		Responsible Department		Production Material Control Department	
Prepared By:	Wang Shuhua	Reviewed by (Leaders):	Wang Shuhua	Reviewed by (Department):	Bai Xiaoli		
Department & Personnel's Signature:	ShaoLin						
Objective:	The process has been made for standardizing the management, streamlining processes, identifying the responsibility and interface relations of relevant departments during receiving and inspecting incoming purchasing material, and ensuring efficient process of receiving material and in timely and accurately data input.						
Application Scope:	This process is suitable for managing receiving and inspection the purchasing material of MM module management, with the applicable to receive and inspect the incoming material for various departments in the company.						
Main Content:	Clarify the responsibility and interface relations of relevant departments during receiving and inspecting; made clear of receiving preparation, flow direction of incoming purchasing material, flow direction of certificate, and the flow direction of information and requirements.						
Bylaw:	The production material control department is responsible for modify and interpret this process since the date of issue.						
B. Revision Record		Revised By		Revision No.			
2011.01		Wang Shuhua		First issue			
C. Approved		Date		Content			
Approved by		2011-1-11		Agree to issue			
Lu Xiwei							


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	<p>Department to input the receiving information into SAP system based on the order number, and actual counting condition of the arrival notice of purchased material. Mark "not installed on car" on the material which will not be installed on car" on the &lt;list of arrival notice of purchased material&gt;, and check whether there is any difference and mistakes between the notice and SAP system, eg. the receiving information cannot be put into the system. If there is any difference, the material will be transferred to the area to be clarified; if no difference, the arrival notice of purchasing material can be closed.</p>	<p>Department</p>	<p>After inputting the arrival material</p>	<p>Acceptance Inspection Controller</p>	<p>Production Material Control Department</p>	<p>Print the list of inspection free material in SAP system and put into storage</p>
<p>Print the list of incoming material required inspection in SAP system and prepare for inspection</p>	<p>Production Material Control Department</p>	<p>Within the same date of inputting the arrival material</p>	<p>Acceptance Inspection Controller</p>	<p>Within the same date of inputting the arrival material</p>	<p>Production Material Control Department</p>	<p>Transfer the material in SAP system to inspection area with the arrival notice of purchased material.</p>
<p>According to &lt;incoming inspection process of purchasing material QA-250&gt;, the Material Inspector will inspect the quality of the purchased material which will be installed on car, and verify whether the material is compliant. According to &lt;incoming inspection process of purchased material which will not be installed on car QA-360&gt;, the relevant Quality Inspector will inspect the quality of the purchased material which will not be installed on car, and verify whether the material is compliant.</p>	<p>Quality Assurance Department/ Relevant Quality Validation Department</p>	<p>When confirming the quality</p>	<p>Material Inspector/ Relevant Quality Inspector</p>	<p>When confirming the quality</p>	<p>Quality Assurance Department/ Relevant Quality Validation Department</p>	<p>In SAP freeze the operation of the information of arrival materials, and put the non-compliant tag on the materials accordingly.</p>


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	<p>Receiving Inspector</p>	<p>material (at the same time) confirming the condition is able to receive the material</p>	<p>Department/ Purchasing Department</p>	<p>people to unload, and with the Receiving Inspector from Purchasing Department together to count, mark, visual inspection according to &lt;arrival purchased materials packaging and sign management inspection&gt;, to check whether the packaging is compliant, the Purchasing Department will agree to carry out further work on except the serious damage on package, and to fulfill the penalty charge notice&gt;, and record the non-compliant packaging condition confirmed by both parties in the column of "packaging issues" on arrival notice of purchased material, and also need to identify the amount. "The Purchasing Department will inform the material if they do not agree", to carry out counting and handover normal, otherwise the Purchasing Department will punish or send the material back to supplier as per &lt;returning purchasing material management process PMC-240&gt;.</p>	<p>Production Material Control Department/ Purchasing Department</p>	<p>During receiving and counting</p>	<p>Acceptance Inspection Controller Receiving Inspector</p>	<p>PMC-230-070 is there any difference between actual material and the list</p>
<p>PMC-230-080 deal with the difference</p>	<p>Receiving Inspector</p>	<p>Found out the difference when receiving and counting (immediately)</p>	<p>Purchasing Department</p>	<p>Arrange inspection and handle the problematical material, and give the feedback to the relevant person</p>	<p>Purchasing Department</p>	<p>When confirming that it is able to modify the arrival notice of purchased material (within the receiving date)</p>	<p>Planner</p>	<p>PMC-230-090 modification of arrival notice of purchased material</p>
<p>PMC-230-100 sign for handover and record receiving information</p>	<p>Acceptance Inspection Controller Receiving Inspector</p>	<p>No difference after counting and receiving (immediately)</p>	<p>Production Material Control Department/ Purchasing</p>	<p>Both parties sign on the arrival notice of purchased material and confirm the handover, and keep the notice. The Acceptance Inspection Controller from Production Material Control</p>	<p>Production Material Control Department/ Purchasing</p>	<p>When confirming that it is able to modify the arrival notice of purchased material (within the receiving date)</p>	<p>Planner</p>	<p>PMC-230-100 sign for handover and record receiving information</p>

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		CRC Management Specification of Receiving and Inspection Materials PMC-230GF-001V2.0★ CRC Management Method of Receiving and Inspection Materials PMC-230BF-001V2.0	
<b>Supporting management specification:</b>		<b>Position</b>	<b>Content</b>
<b>Authority management:</b>			
<b>Report required:</b>		1. Inspection sheet for incoming materials 2. Transferring and storage list for compliant products 3. The list of materials put into storage without inspection 4. Disposing list of non-compliant products.	
<b>Difference of function:</b>			
<b>Integration:</b>			
<b>Interface:</b>			

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		In SAP, print the list of the material required repair and prepare for transferring		Production Material Control Department
PMC-230-170 print the list of the material required repair	Acceptance Inspection Controller	In the date of system freezing operations		
PMC-230-180 transfer the material to non-compliant area	Acceptance Inspection Controller	In the date of printing the list of the material required repair		Production Material Control Department
PMC-230-190 shall the material be returned	Planner	In the date of transferring the material to unqualified area		Purchasing Department
PMC-230-200 organise to repair	Receiving Inspector	Within 3 days after system confirming non-compliance		Purchasing Department
PMC-230-210 quality inspection, put compliance or release tag on the qualified material	Material Inspector/ Relevant Quality Inspector	Within 2 working hours after confirming that the material is compliant or releasable		Quality Assurance Department/ Relevant Quality Validation Department
PMC-230-220 print the <list of qualified material transferred to relevant warehouse>	Acceptance Inspection Controller	After system confirming compliance		Production Material Control Department

**E. Others Assumption:**

**Special condition:**

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In the case that retrofit work may need to be carried out on vehicles after delivery to the MBTA, while it may be expedient to perform such work on MBTA's property, CNR recognizes this may not always be possible. Accordingly, CNR will arrange to perform the retrofit work off site. Currently, it is CNR's plan to transport vehicles requiring significant work back to the final assembly facility on flatbed trucks. However, CNR realizes that this plan has certain drawbacks (such as time delay and potential transportation damage), and so CNR is exploring leasing a small facility close to Boston to mitigate these effects should performance of such work prove to be necessary.

## 2.5 MASSACHUSETTS FINAL ASSEMBLY FACILITY

Tab I.2 (e) Massachusetts Final Assembly Facility

*Identify whether the Offeror will utilize an existing or new assembly facility in Massachusetts, the Offeror's schedule for the conversion or creation of a new assembly facility in Massachusetts in order to meet the delivery deadlines in the Contract, and measures the Offeror will take in accordance with this schedule, including but not limited to the hiring and training of skilled labor and the transfer or acquisition of equipment and technology in order to satisfy the manufacturing and assembly requirements.*

*List all efforts Offeror has undertaken in order to satisfy the requirements of this section, such as posting job opportunities in local papers, using employment recruitment firms or job placement organizations to fill newly created positions, forming partnerships to support the development of a skilled workforce capable of performing technically demanding tasks at the assembly facility, contacting unions and educational institutions in order to utilize local labor pools, advertising for or hiring designers and contractors for the assembly facility, beginning the permitting process for the assembly facility, and contacting suppliers for the purchase of tools and machinery for the assembly facility. The MBTA encourages Offerors to learn from the Workforce Initiative Now (WIN) model employed by Denver RTD, which aims to foster workforce development in targeted communities identified by key socio-economic factors, such as unemployment rate, low income job growth, and educational attainment, and to ensure that communities and groups historically underutilized in the vehicle manufacturing and transportation sectors have full and fair access to job opportunities generated by publically funded projects, such as this MBTA Red and Orange Line Vehicle Procurement.*

CNR began its site search for a rail car assembly facility in Massachusetts in early 2010 in anticipation of MBTA's Request for Proposal for Red Line and Orange Line car replacement. Criteria for the search and selection process was driven by CNR's plan to make Massachusetts its North American rail car assembly center from which it would compete for rail car projects in the US, South America and other overseas markets. Paramount was CNR's desire to develop a rail car assembly plant on a Massachusetts site with significant expansion capability and access to a robust manufacturing based labor force.

**CNR has arranged to build a \$60 M+ final assembly facility in Springfield, MA**

CNR engaged the Boston based real estate advisory firm of NAI Hunneman, along with a team of consultants which included Vanesse Hangen and Brustlin (VHB) to assist with the search. Company officials made numerous trips to Massachusetts to visit sites in various regions of the state and to familiarize themselves with the resources Massachusetts had to offer.

Through 2011 and 2012, CNR continued to monitor the progress of the Red Line and Orange Line procurement, and in the fall of 2013 finalized its search for a rail car assembly site. **Specific site search criteria were:**

- Sites with rail accessibility to enable carbody delivery by rail in order to minimize shipping costs and damage to carbodies during transport; also to have the potential to ship finished cars to customers by rail.
- Sites/buildings that would allow for the expansion of an initial 150,000 ft<sup>2</sup> plant for the Red Line/Orange Line procurement to an additional 200,000 to 250,000 ft<sup>2</sup> for future railcar projects.
- Sites/buildings that could accommodate a test track of at least 1,000 ft. because CNR desired to have this testing capability on site to facilitate track testing of vehicles for delivery of problem-free cars to its customers.
- Sites/buildings accessible to at least 6,000 kVA of power for both the plant and the test track.
- Availability and accessibility of skilled manufacturing labor especially in the electrical, mechanical, metal working/welding and engineering fields. While CNR was anticipating an extensive training program for its Massachusetts labor force, it was deemed essential that new employees be drawn from a region with a deep manufacturing heritage with local technical training resources and opportunities.
- Sites/buildings that were fully permitted and “shovel ready” so that CNR would be assured that it could set the plant up and meet the delivery schedules required in the MBTA RFP.

Data was collected by NAI Hunneman and its subcontractors on more than 50 potential sites in Massachusetts. Site visits were conducted and detailed site analysis completed on finalist sites with program test fits, preliminary engineering, permitting, and labor force analysis.

Based on this analysis, CNR selected 655 Page Boulevard in Springfield as the site that best met its criteria for a North American manufacturing center. A purchase option agreement was executed between CNR and the owner of 655 Page Boulevard in March of 2014 giving CNR control of the site through the completion of the MBTA RFP and bid selection process.

A conceptual plan for CNR’s railcar assembly plant at 655 Page Boulevard is presented in the images shown in Section 2.1.3 above. **Key points about this site are:**

- The plot covers 40 acres, level, cleared and ready for construction.
- There is a 13,800 volt electrical substation next to the site that will allow for cost effective extension of the 6,000 kVA service for the assembly plant and test track.
- The site is zoned for industrial use in a neighborhood with a history of industrial use. Westinghouse operated on the site for several decades.
- From a land use regulatory standpoint, all entitlements are in place save for a site plan review/special permit from the City of Springfield that will be completed in early 2015 should CNR receive the bid award. The City has declared its unanimous support for the project including a resolution of support voted on by the Springfield City Council. Additionally, the CNR project for 655 Page Boulevard has been endorsed by the East Springfield Neighborhood Association. Excerpted from its minutes:

“On behalf of the East Springfield Neighborhood Council, including President Kathleen Brown, Vice President Gil Perron and participating council members, we have



unanimously voted to support efforts by CNR Changchun Rail Vehicles Co., Ltd. to re-establish a manufacturing facility at the former Westinghouse manufacturing center that once housed the Stevens-Duryea automobile plant, the first mass produced auto plant in the United States. Springfield's rich manufacturing heritage supports the return of an assembly plant that will stimulate the economy through vocational training and job creation. The East Springfield Neighborhood Council embraces Changchun Rail as a partner and pledges to work cooperatively with them to realize this historical endeavor."

- The site has been environmentally cleared under the MCP by the prior owner. It is not anticipated that the first phase of development will trigger any MEPA thresholds.
- Rail access is via CSX. CNR will re-establish the rail spur that previously existed on the site as recently as 24 months ago. Planning to re-establish this spur is underway with CSX.
- The first phase building is 125,000 ft<sup>2</sup> of manufacturing space with 33,750 ft<sup>2</sup> of office space for a total of 158,750 ft<sup>2</sup>.
- The site can accommodate an additional 206,830 ft<sup>2</sup> of building expansion for additional rail vehicle contracts.
- The site will allow CNR to construct a 1,800 ft. test track facility.
- A schedule for the development of CNR's railcar assembly plant is shown below. This schedule assumes an MBTA notice to proceed on 1/1/2015. Building design and permitting would be completed in 2015. Construction would start in Q1 of 2016 and finish in Q2 2017. Full railcar production at the new plant would begin in May of 2018, with the first production cars completed no later than December 31, 2018, 48 months after contract award as specified in the RFP.
- Estimated cost for the construction of the Phase I railcar assembly and test track facility described above is more than \$60,000,000.00 including land and equipment purchase.

CNR executed a pre-proposal outreach plan inviting disadvantaged businesses to participate in an informational workshop outlining various subcontracting opportunities available to them. Two 4-hour workshops were held attracting 80 Minority and Women Owned Business Enterprise (M/WBE) businesses. The procurement process to identify subcontractors to provide rolling stock materials, assembly work, manufacturing equipment, and technical consultants began with the solicitation of a Business Profile and Statement of Qualifications.

**Advance pre-proposal outreach included the following efforts:**

- Contacted 873 M/WBE businesses via postal service inviting them to workshop.
- Maximized workshop participation in Western Massachusetts and Boston through targeted advertising in eleven (11) newspapers.
- Coordination with the Massachusetts Office of Supplier Diversity (SDO) and the following minority organizations to share workshop(s) information via their member database: Massachusetts Small Business Association (SBA), Massachusetts Minority Contractors' Association, Boston Worker's Alliance, Urban League of Eastern Massachusetts, Center for Women & Enterprise.
- Provided project scope.
- Provided Powerpoint Presentation outlining M/WBE Outreach Plan.

**CNR made significant  
M/WBE outreach efforts already  
reaching 873 businesses.**

- CNR representatives provided Q/A forum relating to Rolling Stock Subcontracting, Services, and Facility and Construction opportunities.

Similar to the Workforce Initiative Now (WIN) model initiated by Denver RTD, CNR is committed to helping the unemployed and local communities participate in career opportunities in the transportation and construction industries. CNR is underway with unique partnership building strategies comparable to the WIN model that has begun the process of engaging participation from Springfield officials, local communities, and organizations to collectively create an effective, inclusive, and diverse outreach program. CNR continues to work with the City of Springfield's Office of Planning and Economic Development on crafting a plan to stimulate the area's economy through career training and job creation.

CNR interest in the region's industrial and technological schools prompted a visit to one of Springfield's premiere technological schools, the Roger L. Putnam Vocational Technical Academy, where CNR representatives applauded the school's focused curriculum on the skills and training necessary to build a car manufacturing workforce, including a Research and Development Program. CNR also toured Springfield's Western New England University College where Electrical, Industrial, and Mechanical Engineering undergraduate programs are considered the most challenging in Western Massachusetts.

The outcome of connecting with these educational institutions has resulted in ongoing dialogue to collaboratively devise a plan to foster job training and placement. To further advance the search and participation of additional vocational institutions, CNR has identified, and will pursue potential partnerships with UMASS Amherst College of Engineering, Springfield Technical Community College, Westfield Technical, Chicopee Comprehensive High School, Pathfinder Regional in Palmer, and Franklin County Regional Technical.

CNR has partnered with David M. Cruise, President and CEO of the Regional Employment Board of Hampden County, Inc. (REB), to develop and implement training programs to ensure and retain full time career pathway employment positions with CNR. The REB will manage and coordinate the outreach and recruitment phase of the program. The Outreach and Recruitment Plan and process will ensure access equity in the selection process. REB will collaborate with partners in the implementation of the Outreach and Recruitment Plan including: FutureWorks Career Center in Springfield and CareerPoint in Holyoke, as well as the Region's Department of Veteran's Services (DVS) in order to develop a specific coordinated approach to identifying veterans. Additionally, the REB will coordinate the delivery of the classroom and hands-on training to applicants who have successfully completed the assessment program and have been interviewed by the REB for inclusion in the training program. Training will be conducted by the following Springfield-based educational institutions that have the required equipment, software, tooling and materials. The REB will contract with Springfield Technical Community College, with instructors from Roger L. Putnam Vocational Technical Academy, and with other instructors who are currently providing similar training services for the REB.

CNR continues to work with Dan D'Alma, President of the Pioneer Valley Building and Construction Trades with **74 member locals representing over 75,000 working men and women across the state**. Through their robust training programs, and commitment to apprenticeship training, particularly in association with this contract, the MBTC will play an integral role with the hiring and training of skilled labor including carpenters, electricians, roofers, sheet-metal workers, painters, boilermakers, plasterers, ironworkers, production workers, apprentices, and journeymen.



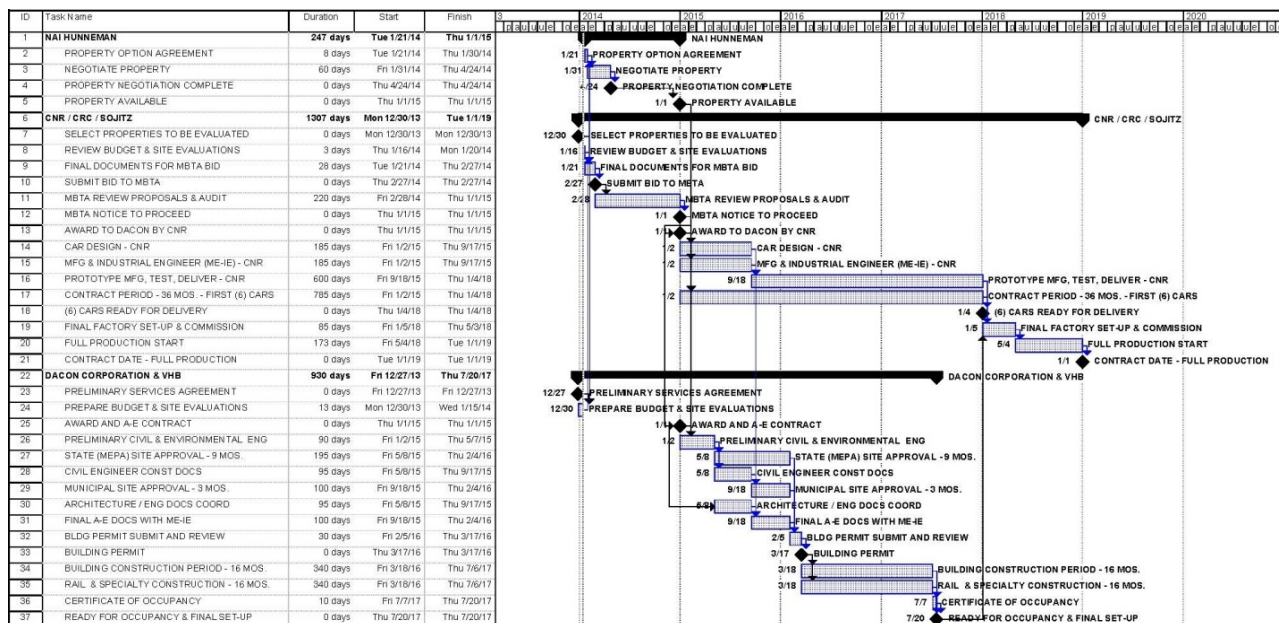
**Further details of the scope of construction include:**

- Installation of secure fencing around the facility and a gatekeeper's building.
- Installation of two car transfer tables, one at each end of the workshop bays, to transfer vehicles between bays.
- Installation of a test track, including a power rail and a 4,000 kVA substation, together with safety fencing.
- Installation of a sidings track.
- Installation of 5 workshop tracks, for two production lines, two in the static testing bay, and one in the Truck Shop.
- Installation of one overhead crane inside the workshop for the installation of roof-mounted equipment.
- Installation of four overhead cranes in the Truck Shop.
- Installation of one overhead crane inside the Warehouse.
- Installation of lifting jacks.
- Installation of weighing equipment.
- Installation of a water-tightness testing facility.
- Installation of heating and air conditioning system, lighting system, electrical power supply and distribution system (including a 5,000 kVA substation), and an air supply system.
- Construction of a secure chemical and paint storage facility.
- Creation of office space and manual workforce facilities.
- Construction of a loading and unloading area, including a 60-ton overhead crane.
- Construction of an internal roadway and employee parking space.

CNR has identified and planned all activities to acquire the property, obtain permits, run utilities, construct facilities, equip and commission facilities in advance of production needs per the project schedule. The facility mobilization schedule is shown below.

**The mobilization schedule  
ensures facility will be complete  
prior to car production needs.**





### Springfield Facility Mobilization Schedule

CNR estimates that a minimum of 150 full-time staff will be employed at the Springfield facility, of which approximately 100 will be production line technicians, including testing and commissioning staff. The remaining 50 will consist of managers and supervisors, office support staff, and after sales staff. In addition to this shop staff, CNR will engage other staff, such as cleaners and security personnel. CNR expects that all of the production line technicians will be hired locally, and that the vast majority of the managers, supervisors and office support staff will be hired in the U.S. However, CNR will also have a small number of Chinese staff stationed in the Springfield facility to ensure project continuity, act as trainers, and perform certain other functions.

CNR considers that it will be possible to hire managers, supervisors and office support staff from within Massachusetts that have the requisite skills and experience, and that minimal training will be required, except for integration into the CNR organization. CNR plans to hire all of the production line technicians locally. However, it is expected that a significant amount of training will need to be provided to ensure that they have the necessary skills and aptitude to work in a rail vehicle assembly facility. When hiring technicians, CNR will pay particular attention to individuals' aptitude and attitude, and past relevant experience. CNR's training program, which will take place over several weeks, will include craft skills assessment and training, safety awareness, drawing reading, manufacturing process sheet reading and understanding, computer skills, and other classroom and hands-on training. WBE and MBE companies will be used for local hiring.

Training for final assembly will include a technology transfer process. This will entail bringing key personnel from the U.S. to China for training by our Chinese staff having expert knowledge of these designs and procedures. This will be followed by deployment of Chinese supervisors and trainers to the U.S. for further training of local final assembly staff. In addition to hands-on training in mechanical/electrical assembly, worker training will also include familiarization with workmanship standards and acceptance criteria. After the technology transfer period, some Chinese staff will be retained at the Massachusetts final assembly site to monitor the performance and compliance of U.S. operations.

The project organization chart showing the final assembly staff is located in Tab I.1a in Section 1.1 of this proposal.

## 2.6 MASSACHUSETTS JOB CREATION AND RETENTION

**Tab I.2 (f) Massachusetts Job Creation and Retention**

*In tabular format, identify by job classification (e.g. electricians, mechanics, welders, engineers, testers, quality assurance staff, administrators, building maintenance, etc.) each position Offeror expects to directly employ in Massachusetts, when each position will be created and filled in reference to the production schedule, the duration of each position in reference to the production schedule, and the hours of work required for the position in full-time equivalents calculated as the total number of hours of work required by the position per week divided by forty (40).*

CNR is making a huge commitment to the State of Massachusetts by constructing a brand new facility in Springfield and making it our main manufacturing facility and headquarters for all U.S. operations continuing beyond performance of the Orange & Red Line Project. The following tables provide preliminary listings of the new jobs that will be created in association with CNR's performance of this contract. The first table shows CNR's planned staffing to accomplish the required Orange & Red Line Project delivery rates over the life of the project. The second table shows the jobs created to construct CNR's new final assembly facility in Springfield, MA.

**The Springfield facility will create over 150 jobs spread over a period of 7 years.**

CNR's project schedule mobilizes this workforce over 6 phases. Each phase is cumulative and the job quantities represent new hires coming in at that stage. To simplify the presentation of data for purposes of this table and RFP required page limits, all positions are calculated to be full-time over the periods specified. Positions to be filled by CNR employees are not counted in the job creation total. These numbers will be revised as work scopes are further refined.

### CNR Job Creation Table

\* Excluded from new position total; (position filled by CNR employee).

Job Position	Quantity	Start Date	End Date	Full-time Equivalent
<b>Phase I: Transitioning design control to local Project Management and Design Team</b>				
Executive Oversight Committee*	4	1/1/2015	6/1/2027	25%
General Manager*	1	1/1/2015	6/1/2022	100%
Construction Manager (Final Assembly)	1	1/1/2015	6/1/2022	100%
Project Manager	1	1/1/2015	6/1/2022	100%
Deputy Project Manager	1	1/1/2015	6/1/2022	100%
Administrative Assistant	1	1/1/2015	6/1/2022	100%
Project Engineer	1	1/1/2015	6/1/2022	100%
Industrial Engineer	1	1/1/2015	6/1/2022	100%
Systems Integrator	1	1/1/2015	6/1/2022	100%
Reliability Engineer	1	1/1/2015	6/1/2022	100%
Electrical Engineer (1 Lead)	2	1/1/2015	6/1/2022	100%
Mechanical Engineer (1 Lead)	2	1/1/2015	6/1/2022	100%
Quality Engineer	1	1/1/2015	6/1/2022	100%
Commercial Manager	1	1/1/2015	6/1/2022	100%
Accountant	1	1/1/2015	6/1/2022	100%

Job Position	Quantity	Start Date	End Date	Full-time Equivalent
Clerk	1	1/1/2015	6/1/2022	100%
Procurement Manager	1	1/1/2015	6/1/2022	100%
Purchasing Agent	1	1/1/2015	6/1/2022	100%
Phase I Sub-Total	18			
<b>Phase II: Begin Mobilization Plan Orange Line to transfer of technology to Springfield</b>				
Production Manager	1	7/1/2017	6/1/2022	100%
Training Supervisor	1	7/1/2017	6/1/2022	100%
Assembly Stage 1 Team Leader	2	7/1/2017	6/1/2022	100%
Assembly Stage 2 Team Leader	2	7/1/2017	6/1/2022	100%
Assembly Stage 3 Team Leader	2	7/1/2017	6/1/2022	100%
Assembly Stage 4 Team Leader	2	7/1/2017	6/1/2022	100%
Assembly Stage 5 Team Leader	2	7/1/2017	6/1/2022	100%
Assembly Stage 6 Team Leader	2	7/1/2017	6/1/2022	100%
Quality Assurance Manager	1	7/1/2017	6/1/2022	100%
Quality Assurance Inspector	2	7/1/2017	6/1/2022	100%
Test & Commissioning Manager	1	7/1/2017	6/1/2022	100%
Warehouse/Inventory Manager	1	7/1/2017	6/1/2022	100%
Product Support Manager	1	7/1/2017	6/1/2022	100%
Warranty Manager	1	7/1/2017	6/1/2022	100%
Phase II Sub-Total	21			
<b>Phase III: Finalize Mobilization Plan for Orange Line, Assembly &amp; Test</b>				
<b>Phase IV: Final Assembly for Orange Line, Mobilization Plan Red Line</b>				
Human Resource Manager	1	1/1/2018	6/1/2022	100%
Safety & Health Manager	1	1/1/2018	6/1/2022	100%
Training Supervisor	1	1/1/2018	6/1/2022	100%
Test & Commissioning Engineer	1	1/1/2018	6/1/2022	100%
Test & Commissioning Technician	2	1/1/2018	6/1/2022	100%
Quality Assurance Auditor	1	6/1/2018	6/1/2022	100%
Quality Assurance Inspector	2	6/1/2018	6/1/2022	100%
Final Assembly Technician	64	6/1/2018	6/1/2022	100%
General Helper (warehouseman, forklift driver...)	3	6/1/2018	6/1/2022	100%
Phase III and IV Sub-Total	76			
<b>Phase V: Red Line assembly &amp; test, Orange Line Warranty Support</b>				
Warranty Coordinator	1	12/1/2018	12/1/2026	100%
Quality Assurance Inspector	2	7/1/2019	6/1/2022	100%
Test & Commissioning Engineer	1	7/1/2019	6/1/2022	100%
Test & Commissioning Technician	2	7/1/2019	6/1/2022	100%
Final Assembly Technician	28	7/1/2019	6/1/2022	100%
Phase V Sub-Total	34			
<b>Phase VI: Warranty Support, Warranty Support Red Line</b>				
Warranty Coordinator	1	11/1/2019	7/1/2027	100%
<b>Project Total</b>	<b>150</b>			

Note the above table excludes janitorial and security services, which will create even more jobs.

### Six Phases of CNR U.S. Manpower Loading

<b>Phase I</b>	New staff: 18	Transitioning design control to local Project Management and Design Team
<b>Phase II</b>	New staff: 21	Begin Mobilization Plan Orange Line to transfer of technology to Springfield
<b>Phase III</b>	New staff: 76	Finalize Mobilization Plan for Orange Line, Assembly & Test
<b>Phase IV</b>		Final Assembly for Orange Line, Mobilization Plan Red Line
<b>Phase V</b>	New staff: 34	Red Line assembly & test, Orange Line Warranty Support
<b>Phase VI</b>	New staff: 1	Warranty Support, Warranty Support Red Line

Phase I. CNR will establish a local office to provide MBTA convenient direct access to CNR project management, engineering and production staff. The 18 people indicated for this phase represent the liaison staff for project communications between CNR CRC and CNR MA and show the importance CNR places on effective project communications. The local office team will be the voice of the customer and will have the authority to direct all of CNR according to the project management process agreed between MBTA and CNR. The local office team will remain at the local office for the duration of design, manufacturing and delivery.

Phase II. CNR understands the need for a successful transfer of technology from Changchun to Springfield. This will be handled by assigned key personnel that will participate in the Pilot Car program in China. CNR intends to send a staff of 21 industry professionals from North America to Changchun, to remain in Changchun until delivery of the Orange Line Pilot cars, with the goal of duplicating the production process for the Pilot cars at the Springfield facility.

Phase III & IV. Phases III and IV will be the transition from a mobilization phase to permanent staffing at the Springfield headquarters. Production of the Orange Line will initiate during this phase. Staff members from Phase II will be utilized to train new staffing hired during these phases. It will be during this phase that assembly, testing and commissioning, and acceptance of the Orange Line vehicles will occur and the Red Line mobilization plan deployed. CNR QA staff will be increased to provide sufficient QA oversight of all production activities and incoming components. Testing and commissioning will also be occurring at the Springfield static test area and dynamic test track and at MBTA.

Phase V. CNR will establish a comprehensive warranty program through this phase and additional resources will be brought on for Red Line production. Test/commissioning staff and QA inspectors will also be added. Production will be at full capacity for the MBTA project during this phase.

Phase VI. CNR will add an additional Warranty Coordinator specifically for the Red Line to ensure ample staff to support both lines, and also support MBTA in their inventory process.

**In addition to the above labor, additional jobs will be created for construction of the new Springfield facility.** The following table identifies approximately 100 construction jobs over a period of 15 months from a quotation CNR has received.

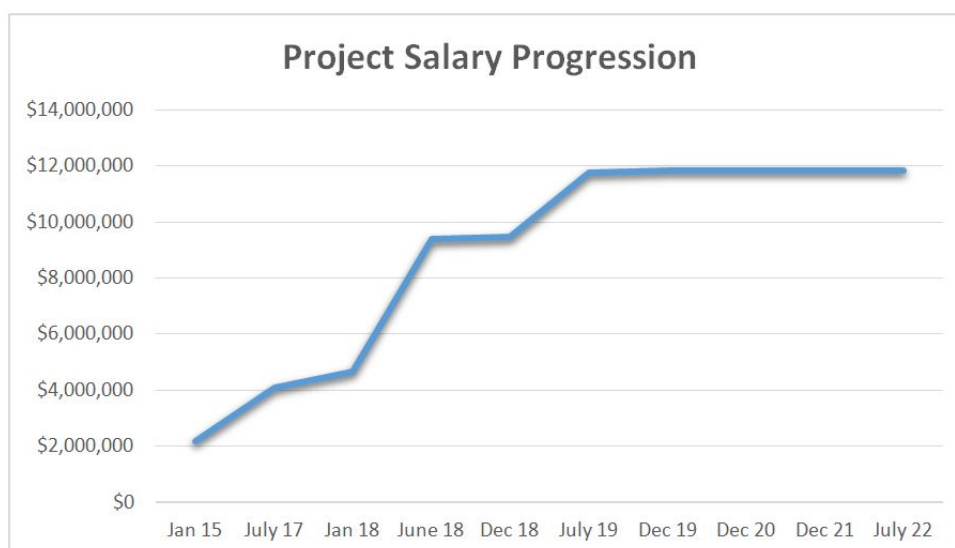


### Construction Jobs to Construct Springfield Facility

Trade	2015			2016											
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Sitework	10	10	10	5	5	5	5	5	4	4	10	10	4		
Concrete	8	8	10	10	10	10	10			6	6	6			
Steel			8	8	8	8									
Misc Metals							4	4	4	4					
Roofing							12	12	12	12					
Walls								20	20	20	20	20			
Finishes											15	15	15	15	10
Food Service											3	3			
Elevator										3	3				
Fire Protection								4	4	4	4	4	4	2	2
Mechanical					4	4	6	10	10	10	10	6	6	6	3
Electrical					3	3	6	6	8	8	8	8	6	4	4
Plumbing					3	4	6	6	6	6	6	6	6	2	2
Other										10	10	10	10	10	8
<b>Total Workforce Per Month</b>	18	18	28	23	33	34	49	67	68	77	85	78	41	29	21

Excluding construction, janitorial and security, **the above jobs represent approximately \$90,000,000.00 in wages for the CNR Springfield and Boston site staff over the next 7 years** based on calculating the median wages for each position over their respective periods of performance for this project. The chart below shows the total salaries per year for the new project staffing positions. Note this economic benefit is based only on direct wages and does not consider the significant additional impact of our supply chain and indirect and induced impacts for this project.

**Local economic benefit from  
Springfield wages will be \$90M  
from 2015 – 2022!**



Beyond this, CNR additionally notes that it is our intention to retain all of these positions after the MBTA order to conduct other U.S. and North American jobs that we are planning to bid in the coming years as we grow our projects in the western hemisphere. This represents a very sizable commitment to and investment in the economy of the State of Massachusetts.

## 2.7 WORK BY OTHER ENTITIES

Tab I.2 (g) Work by Other Entities

*List all other work for entities other than the MBTA at the separate locations indicated in (c) and (d) during the period of the Contract detailing the customer, the quantity and type of vehicle, and delivery dates for same. Describe plant capacity and indicate the capacity available for work under this contract while satisfying other commitments. This includes the final assembly contractor. Provide a statement, supported by further details, that the contractor has the capacity, personnel and other resources to build the Vehicles required to be delivered under the Contract within the time proposed.*

CNR's Changchun manufacturing facility has the capacity to produce 1,000 stainless steel vehicles per year. At the time of manufacturing vehicles for the MBTA Orange and Red Line projects, no rapid transit vehicles are currently scheduled to be manufactured in Changchun, meaning that manufacturing capacity would not be in question.

CNR utilizes four production lines that are dedicated to the production of stainless steel car manufacturing in its Changchun manufacturing facility. Should other stainless steel vehicle projects be awarded to CNR in parallel with the MBTA project, CNR commits to prioritizing two production lines for the Orange and Red Line vehicles.

The Massachusetts final assembly facility will have an output of 12 cars per month. This facility will be dedicated to the final assembly of MBTA's Orange and Red Line vehicles, and no other work is currently planned to be performed at this facility.

Accordingly, CNR is able to categorically state that it has the capacity, personnel and other resources to build the vehicles required to be delivered under the Contract within the time proposed.

## 2.8 MAJOR SUB-SYSTEM SUPPLIERS

Tab I.2 (h) Major Sub-System Suppliers

*List locations and capacities of proposed suppliers for major subsystems listed in Tab I.1 Technical Approach. Include information showing North American manufacturing experience and capacity for this project.*

The following table identifies CNR's potential suppliers for the major subsystems and their manufacturing location and capacity for this project. Their experience with manufacturing these products is provided in Section 3 of this proposal.

**TABLE OF MAJOR SUB-SYSTEM SUPPLIERS**

Supplier	System/ Equipment	Type of Equipment	Facility Location(s)	Plant Capacity Description
<b>Alstom Signaling, Inc.</b>	Cab Signaling Equipment	Automatic Train Protection; Automatic Station Identification	Rochester, NY, USA	Alstom Signaling's facility is able to run up to 50 active projects simultaneously, and Alstom will be able to satisfy the proposed MBTA delivery schedule with no issues.
<b>Ansaldo STS (ASTS)</b>	Cab Signaling Equipment	Automatic Speed Regulation	Batesburg, SC, USA	The Batesburg facility has ample production capacity to fulfill MBTA's Red and Orange line project even with ASTS USA's current and anticipated contracts in progress.
<b>Baultar Concept, Inc.</b>	Composite Flooring	Abrastop Foam Lite, Abrastop Foam, and Abrastop Fibre	Windsor, QC, Canada	Baultar's production capacity is 50 panels per day per shift. The MBTA project will require ~ 30 panels per week, or 6 panels per day. This represents about 20% of actual capacity but only 12% of future (2015) capacity. Baultar can also implement a second shift to almost double capacity.
<b>Bradken, Inc.</b>	Trucks	Steel Castings	Atchison, KS, USA	Based on predicted orders, Bradken's plants are able to meet its commitments utilizing two shifts. Bradken can also utilize a third shift if required to further increase capacity.
		Machining, painting, assembly	St. Joseph, MO, USA	
<b>CNR Changchun Railway Vehicles Co., Ltd.</b>	Carbody		Changchun, China	CNR CRC's plant has far more than sufficient capacity, taking into account all projected work, to support the MBTA project.
<b>Elicon National Inc. (Faiveley Transport)</b>	HVAC		Greenville, SC, USA	During the expected delivery period, Faiveley's facility will have the capacity to fulfill the delivery schedule for MBTA's Red and Orange line task.
	Friction Brake System			
	Door Systems	Includes Door Open Pushbuttons (Option VII), Gap Mitigation Device (Option VI)		
<b>FAAC Inc.</b>	Training Simulator (Option XI)		Royal Oak, MI, USA	FAAC has more than sufficient capacity taking into account projected projects.

Supplier	System/ Equipment	Type of Equipment	Facility Location(s)	Plant Capacity Description
<b>Freedman Seating Company</b>	Seating		Chicago, IL, USA	Freedman's facility currently produces ~2,000 seats per day and has adequate capacity to meet MBTA's schedule.
<b>Kustom Seating</b>	Seating		Bellwood, IL, USA	During the expected delivery period, the facility will be at 60% capacity using a single shift. Plant capacity can be increased, if necessary, using extra shifts.
<b>LECIP Inc.</b>	Lighting		Hornell, NY, USA	LECIP's plant capacity will be adequate to meet MBTA's project schedule.
<b>Mitsubishi Electric Power Products, Inc.</b>	Propulsion System		Itami, Japan	MELCO's plant produces between 250-300 traction motors and 125-150 inverters per month. MELCO's plant will be able to meet MBTA's delivery schedule for the propulsion system.
	Auxiliary Power Supply System; Low Voltage DC Power		Freedom, PA, USA	MELCO's facility has the capacity to produce approximately 9 auxiliary power supply systems and 75-85 HVAC units per month. MELCO's plant will be able to meet MBTA's delivery schedule for these systems.
	HVAC			
	Vehicle Monitoring System	Including Network Equipment and Integrator		
<b>RL Controls, LLC</b>	Communications Equipment including LED and LCD Signage (Option VIII)	CCTV (Option V), Active Route Maps (Option IX), Automatic Passenger Counting System (Option X)	Massachusetts/ Eden Prairie, MN, USA	RL Controls has current capacity to manufacture over 20 vehicle carset systems per month, and production lines will be available for the dates required. Production can be increased by 25% using overtime, Saturday work and support from other divisions. A second or third shift can also be implemented for accelerated delivery schedules on a project-by project basis. Thus, there is adequate contingency even for any unforeseen production delays in existing projects or to accommodate the need to accelerate projects.
<b>Saft America, Inc.</b>	Auxiliary Power Supply System	Battery	Valdosta, GA, USA	Saft America's plant has more than sufficient capacity, taking into account projected work, to support the MBTA project.
<b>Simutech International Co., Ltd.</b>	Training Simulator (Option XI)		Beijing, China	Simutech International has production capacity for 18 sets of full-mission simulators per year, which is more than sufficient capacity even with projected projects in parallel.



Supplier		System/ Equipment	Type of Equipment	Facility Location(s)	Plant Capacity Description
<b>TDG Transit Design Group, Inc.</b>		Lighting		Niagara Falls, NY, USA	The MBTA Red and Orange Line project will take up between 13%-19% of TDG's total plant capacity. TDG will have more than adequate capacity to meet the MBTA schedule.
<b>TOA Communication Systems</b>		Communication Equipment	Communication Equipment	Moorestown, NJ, USA	For MBTA term, this facility will be at 40% capacity using a single shift. Plant capacity can be increased using extra shifts.
			Communication Equipment	Canisteo, NY, USA	The facility will be used only for assembly. Approximately 50% capacity will be available for spares, extra work, etc.
			LCD Monitor (Option VIII)	Japan and Moorestown, NJ, USA	The facility will be used only for assembly. Approximately 50% capacity will be available for spares, extra work, etc. during the MBTA project.
			Active Route Map LED Type (Option IX)		
			CCTV Camera and Display (Option V)		
			Automatic Passenger Counting System (Option X)		
<b>Toyo Denki</b>	<b>Toyo Denki USA, Inc.</b>	Propulsion System	Propulsion Inverter	Freedom, PA, USA	Toyo Denki produces 20 sets of inverters per month. During the expected delivery period, the facility will be at 40% capacity using a single shift. Plant capacity can be increased, if necessary, using extra shifts and extra space.
	<b>Toyo Denki Seizo K.K.</b>	Vehicle Monitoring System	Vehicle Monitoring System Components	Yokohama, Japan	Toyo Denki Seizo produces 12 sets of VMS components per month. During the expected delivery period, the facility will be at 40% capacity using a single shift. Plant capacity can be increased, if necessary, using extra shifts and extra space.
	<b>Toyo Denki USA, Inc.</b>	Auxiliary Power Supply System	Auxiliary Power System; Low Voltage Power System	Freedom, PA, USA	Toyo Denki USA produces 16 sets of APS equipment per month. During the expected delivery period, the facility will be at 50% capacity using a single shift. Plant capacity can be increased, if necessary, using extra shifts and extra space.

Supplier		System/ Equipment	Type of Equipment	Facility Location(s)	Plant Capacity Description
UTC RAS, Inc		Wheelsets	Wheels, Axles, Journal Bearings and Housing	Morton, PA, USA	UTC RAS currently operates one shift and operates at 22% capacity, leaving a significant portion of potential for increases in production output.
Wabtec	Wabtec Passenger Transit	Friction Brake System	Includes Truck- Mounted Components	Duncan, SC, USA	Wabtec Passenger Transit (WPT) currently produces ~ 60 car sets per month per shift for all equipment using full “1st shift operation” in assembly. When additional production capacity becomes essential, WPT can activate 2 additional shifts of production. Overall production volume during the period when deliveries are expected to begin is expected to be at 50 to 60% of total capacity for all contracts during that time period. Based on the projected starting date of shipments and quantities required on a monthly basis, WPT does not anticipate issues in meeting the delivery requirements.
		Couplers			
	Vapor Stone Rail Systems	Door System	Includes Door Open Pushbuttons (Option VII)	Plattsburgh, NY, USA	
			Gap Mitigation Device (Option VI)		

## 2.9 VEHICLE SHIPPING METHOD AND LOGISTICS

Tab I.2 (i) Vehicle Shipping Method and Logistics

*Describe the expected conveyance and route by which the cars will be shipped from the manufacturing site to the Massachusetts final assembly site and to the MBTA Facilities in the greater Boston area. Indicate methods to be used to protect the cars while in transit and during interim storage, if applicable.*

The Pilot cars for both the Orange and Red Lines will be manufactured and assembled in their entirety in CNR's manufacturing facility in Changchun, China, and will be transported by ocean freight to Boston, Massachusetts, and from there, by flatbed truck, to the MBTA's property for qualification testing and commissioning.

For the production cars, the stainless steel carbodyes will be fabricated and assembled in Changchun, China, and then transported by ocean freight to Boston, Massachusetts. Transportation of the carbodyes from the docks to the Massachusetts final assembly facility, and from the Massachusetts final assembly facility to MBTA, will be by way of flatbed trucks.

For ocean shipment, the carbodyes will be covered with a tight-fitting tarpaulin or plastic shrink-wrap, and Pilot cars and production carbodyes will be stored below deck. The carbodyes will remain packaged until ready to be inspected by Receiving Inspection.

For transportation by flatbed truck from the final assembly site to MBTA, cars will be protected by covering them with tarpaulins (likely the same ones as used for overseas transport).

## 2.10 STAFFING OF MASSACHUSETTS FINAL ASSEMBLY FACILITY

Tab I.2 (j) Staffing of Massachusetts Final Assembly Facility

*Indicate the local area office in accordance with Section C4.07. Indicate expected staffing at this location for manufacturer and subcontractor representatives during period from 60 days after Notice-to-Proceed to end of warranty period. Describe decision making authority of such local staff.*

CNR commits to establishing a local office within the MBTA service network for the duration of the Contract to facilitate clear and timely communications with the MBTA. The staff in the Boston office will have decision-making authority for this project to expedite engineering changes, to resolve problems, and to interact with suppliers. Reporting hierarchies are shown in the Project Organization Chart in Section 1.1 of this Proposal. CNR's Project Manager, Deputy Project Manager, Project Engineer, Lead Mechanical and Lead Electrical Engineers, and Administrative Assistant will be located in the Boston office, together with various support staff. The local office will have sufficient space to support work associated with the design review phase pilot car qualification testing phase. At this time, it is estimated that approximately 20 people will work from the Boston local office after notice to proceed and until the Springfield facility is built. Upon opening of the Springfield final assembly facility, key project staff will travel between the local office and final assembly facility as necessary to manage the work and address any issues to ensure that the project progresses smoothly.

The local office will have adequate space for the activities to be carried out there including meeting rooms and office equipment. CNR is currently researching possible locations for this office.

## 2.11 DEPARTMENTAL INTERPLAY

### MBTA RFP No. CAP 27-10 Requirement – Section A1.14 (A)

*The Manufacturing Plan shall also present the interplay between design, production, inspection and testing, commissioning and warranty support, including staffing and their level of responsibility and authority.*

In the complex world of rail vehicle design and manufacturing, it is simply not feasible or desirable for an organization's departments to act completely independently, and interdepartmental interaction occurs from project inception.

Following the signing of the contract, all major departments will begin work on the project; however, the most significant interdepartmental interaction at this stage takes place with the Engineering Department. In conjunction with the Quality Assurance Department, CNR's Engineering Department will make a Design Plan, which will provide the basis for how all designs used on the project will meet the requirements of MBTA's Technical Provisions. The Design Plan will be approved by the QA Department. The Engineering Department will also work closely with CNR's Procurement Department to carefully define the technical requirements for all purchased equipment to be used for construction of the vehicles.

In addition to the formal design reviews required by the Technical Provisions during the design phase, it is CNR's practice to conduct a number of internal design reviews to incrementally advance and check the progress of the design. These internal design reviews will be attended by project representatives from several CNR departments including Engineering (both Design and Manufacturing Engineering), Manufacturing, Quality Assurance, Procurement (when concerning supplier equipment), Project Management, and others. The Manufacturing Department will ensure that designs are capable of being readily manufactured and factory tested, Manufacturing Engineering will provide input on tooling requirements and manufacturing sequence and process, the QA Department will ensure that designs comply with the overall requirements of the TPs and can be properly inspected, and Procurement will ensure that supplier requirements are respected and will communicate any issues to suppliers. The Project Manager will attend key design reviews to monitor and assure project progress.

Also during the project design phase, the Manufacturing and Manufacturing Engineering Departments will be in continual communication to ensure that manufacturing processes are designed with plant facilities and technician capabilities in mind. In addition, the Manufacturing and Material Control Departments will work closely to ensure that material and equipment is properly warehoused and staged to each work station. The QA Department and Manufacturing will jointly ensure that factory tests can be carried out, and will ensure that only current revisions of design documentation and work instructions are available to manufacturing technicians and inspectors.

As part of CNR's engineering change management system, representatives from each of the aforementioned departments will be members of a Change Control Board, which will review and approve all engineering changes.

During car delivery, CNR's Field Service Department will receive the vehicles on MBTA's property and perform the required commissioning tests. Should changes need to be made to cars that have left the factory, the Field Service Department will be responsible for incorporating the changes in accordance with a Field Modification Instruction produced by the Engineering Department and



approved by MBTA. The Field Service Department will also be responsible for collecting vehicle and equipment performance (reliability) data and for ensuring that the data is transmitted to CNR's Engineering Department for evaluation and potential action.

The representatives from each department are empowered as necessary to accomplish their responsibilities as shown on the Organization Chart in Section 1.1. Staffing levels for each department are manned to accomplish assigned tasks within the allotted schedule. Planned staffing as described in Section 2.6 is summarized for each department in the table below.

Department	# of Personnel	
	MA <sup>1</sup>	Changchun
Project Management <sup>2</sup>	12	220
Engineering <sup>3</sup>	8	2200
Procurement	2	285 <sup>4</sup>
Manufacturing	108	10,000
Quality Assurance	9	1,020
Product Support/Warranty <sup>5</sup>	11	250

#### **Project Staffing Levels by Department**

<sup>1</sup> MA includes Boston Local office and Springfield Final Assembly facility.

<sup>2</sup> Project management includes Project Manager, Deputy Project Manager, Contract Administrator, and Assistant and does not include Director level and higher that will also participate in (part-time) project oversight.

<sup>3</sup> Engineering department staff includes manufacturing engineers.

<sup>4</sup> Changchun Procurement staff will focus on procuring material for carbody construction. US MA staff will generally be responsible for procurement of all other materials.

<sup>5</sup> Product Support staff includes Test & Commissioning engineers and technicians, warranty manager and warranty coordinators.

Staffing levels in Changchun exceed 10,000 production personnel and have far more staff than necessary for pilot car and production carbody production for the MBTA project, and can further provide additional personnel to supplement U.S. operations if necessary.

## 3 PAST PERFORMANCE

### 3.1 DESCRIPTION OF CNR CHANGCHUN RAILWAY VEHICLES CO., LTD

Changchun Cars Company (hereinafter referred to as CCC), the predecessor of CNR Changchun Railway Vehicles Co., Ltd. (CNR CRC), was founded in 1954 as one of the key construction projects of the state in the First Five-Year Plan. In March 2002, it was converted into Changchun Railway Vehicles Co., Ltd. In 2009, this Company was listed along with China CNR Corporation Limited.

#### 3.1.1 Size of Company

CNR CRC has over 13,000 employees and a floor space of 1,223 acres (4.95 million sq. m). Since its foundation, CNR CRC has produced more than 30,000 railway vehicles of various kinds (incl. EMUs), accounting for approximately 44% of the total in-service operations throughout all the railway bureaus in China. It has produced over 7000 urban railway vehicles (incl. CRC-Bombardier) accounting for approximately 50% of the total in service throughout China. Out of the 17 cities within China that have urban railway transportation, 14 cities are using vehicles from CNR CRC.

With over 50 years of vehicle development and construction experience, CNR CRC has established a production capacity of 1000 high speed vehicles, 1200 urban railway vehicles, 500 general railway vehicles and 6000 trucks. It has become a base for development, manufacture, maintenance and export of high speed vehicles, urban railway vehicles and trucks with the worldwide first class scale of production, equipments and R&D capabilities.

#### 3.1.2 History

##### Intensive and Pioneering Efforts:

Relying on their knowledge, skillset and will to succeed, the sole specialized passenger railcar manufactory was developed for the New China. The first railway passenger vehicle was made by the new China in 1959.

When only 60% of the planned investment had made by the country at the beginning of construction of CCC, it encountered the problem of possible discontinuation due to the departure of experts from the Soviet Union and the economic difficulty of the country. The people of this factory adhered to self-reliance and made a determined effort to do it well. They designed and manufactured, and repaired at the same time, with attention being paid to both passenger cars and wagons. The factory was built up from nothing through lifting with hands and shoulders. Thus a domestically largest railway passenger manufacturer was established and the first railway passenger car in China was made in Oct. 1959.

Starting from scratch and making an innovation, the first electric metro car in China was made in 1969 and this Factory became the cradle of metro cars for China.

Producing “910” cars laid the foundation for CCC’s special position occupying half of the domestic market of railway passenger cars. In 1985, in order to fulfill the Sixth Five-year Plan of the state, CCC improved its capacity by 33.8% and the number of newly made cars was up to 910, which laid the foundation for its special position occupying half of the domestic market of railway passenger cars.

##### Leading the development:

In 1986, it took the lead in China in introducing 25A type car manufacturing techniques, thus 30 years was recovered by introducing the technologies of 3 cars, which laid the foundation for leading the technological development of railway passenger cars in China.

In 1989, by applying the introduced technology and as a main contractor working with another two manufacturers, this Company was awarded the contract for development of 168 cars through international bidding and made technological transfer to the said two manufacturers. Production of the 168 internationally bid cars ended the 30-year history that only general type 22 railway passenger cars had been made in China and started a new era for China to develop type 25 railway passenger cars.

In 1992, it stopped production of type 22 cars and began producing type 25 cars, one year prior to the MOR, leading the upgrading and generation change of railway passenger cars in China.

On its own initiative, it assumed the task of developing the metro and urban railway equipment industry and influenced and facilitated the issuance of the national strategy of localization of urban railway and metro cars. a) It submitted a written statement to the State Council trying for the policy on localization, in order to prevent too many foreign brands of metro products came into China resulting from many cities' competing in introducing foreign metro systems. b) Notwithstanding the fact was no demand of metro in China Market, CCC neither dismissed the metro research institute nor reduced the staff and kept step with the world in terms of the vehicle development capability, guiding the domestic demand. c) CCC exports metro cars, creating an international brand and leading the domestic demand in return.

Technological R&D leads upgrading of product quality. In 1997, this Company purchased an aluminum car body with manually welded profiles from Germany, which was the first aluminum car body in China. CCC was the first to introduce a stainless steel car body production line and aluminum alloy car body production line and produced EMUs for Kunming, stainless steel metro cars for Beijing and aluminum alloy LRVs, 70% and 100% low-floor vehicles for Wuhan.

CCC provides a strong support for the railway transportation industry of China by making innovation and development:

- It assumed research of high speed maglev vehicles under the “863 Plan” of the state.
- It assumed the technological support project research in the “Eleventh Five-year Plan” of China (high speed EMUs, 100% low-floor vehicles).

#### Historical Timeline:

CNR CRC was reorganized in Mar. 2002. At the first Party Congress of the Company in 2005, a perspective to build an internationally first class railway passenger car manufacturer was proposed. A development strategy objective of “Moving in three steps” was proposed at the second Party Congress in 2009. In face of the new situation and new opportunity with great-leap-forward development of high speed railways, rapid growing up of the mass transit vehicle market and continuous prosperity of the international market demand, the Party Committee of the Company made a strategic decision promptly to increase production and expand capacity in order to build up a largest modern high speed EMU development base in China. Mr. Xiaofeng Dong, secretary of the Party Committee and president of the Company, put forward timely the historical assertion of “great development, rapid development and steep hill climbing.” On May 24th 2008, CRC started to construct the High Speed Train Manufacturing Base and Engineering Test Center. On May 27th 2010, the first phase of construction of the Base was completed and the first 380 km/h high speed

motor car was released. Once completing the construction of the Base, the Company will have the production capacity of 1000 high speed motor cars per year and provide an essential platform for R&D for experiment and manufacture of high speed trains with speed levels over 380 km/h. This indicates that the production scale, product level and R&D and test capabilities of CNR CRC have reached the worldwide highest level.

Currently, the Company owns the most perfect infrastructure hardware and capabilities and has nearly 2000 engineering staff, of which approximately 600 staff are dedicated to product R&D.

The Company has established an operation and development configuration like the three legs of a tripod, i.e. annual production of more than 1000 high speed motor cars, annual production of 1000 mass transit vehicles and annual mean earnings of foreign currencies of USD 500 million from export of vehicles.

### **3.1.3 Resplendent Footmark**

#### High speed EMUs:

Taking the lead in technology and quality, CNR CRC owns technological R&D platforms for 250-km/h, 350-km/h and 380-km/h EMUs as well as the high speed EMU network control technologies fully independently innovated. CRH5 cars are the only high quality EMUs in China adapted to the service environment of  $\pm 40^{\circ}\text{C}$ . 380BL cars are the high quality high speed EMUs with higher operating speed, more advanced technology, higher safety and high comfort. 380C cars are the high speed EMUs created by CNR CRC with fully independent intellectual property rights with stronger traction power, better resistance reduction and noise reduction performance, more energy saving and better environmental protection. The comprehensive inspection cars of 250-km/h high speed EMUs with fully independent intellectual property rights are the most popular EMU called “yellow doctor”, the industrial design of which is awarded the first prize of Chinese patent industrial design.

#### Mass transit and metro cars:

Designing many types, CNR CRC has established the R&D and manufacturing capabilities for different operating modes, namely single track and double track, different traction modes, namely, electric rotating motors and linear motors, different materials, namely carbon steel, stainless steel and aluminum alloy, different car types, namely A, B and C and different series of product, namely low-floor vehicles, high speed maglev vehicles and low speed maglev vehicles, etc, becoming the sole “all purpose” enterprise in the worldwide mass transit vehicle manufacturing field.

#### Exported vehicles:

CNR CRC has become the top manufacturer with respect to coverage and foreign currency earning. CNR CRC’s products have been exported to such countries or regions as Sri Lanka, Saudi Arabia, Thailand, Brazil, Argentina, Australia, Hong Kong and Taiwan, etc. covering Western Asia, Southeast Asia, South America and Australia. In recent years, the average annual earnings of foreign currencies is over USD 500 million and by 2010, the total earnings of foreign currencies is over USD 3 billion.

#### Development of trucks:

Winning the champion for quantity and capabilities. CNR CRC owns the capacity to manufacture 6000 trucks of various kinds with different speed levels, different operating needs and different



track modes. CW400 trucks are, currently, the most excellent high speed EMU trucks, with their elastic suspension technique and two-point support technique reaching the internationally advanced level. CW400 trucks possess a national patent for invention and three national patents of utility model. The independently developed independent-wheel truck technique supports 100% “creation by China” for 100% low-floor LRVs.

#### **3.1.4 Business Scope**

Through many years of product development and innovation, CNR CRC has established four business fields, namely passenger coaches (incl. EMUs and main line cars), mass transit vehicles, trucks and maintenance, created many No.1 in the country and filled many blanks domestically.

#### **3.1.5 Overseas Business**

CNR CRC’s vehicles have been exported successively to more than ten countries or regions, including Brazil, Argentina, Australia, New Zealand, Thailand, Hong Kong, Saudi Arabia, Bangladesh and Sri Lanka. CNR CRC has good performance on the main markets such as South America, Oceania, Southeast Asia and the Middle East. Totally over 4000 vehicles have been exported with the total export contract valued over USD 4 billion. CNR CRC steadily leads the industry domestically in terms of the quantity of product exported.

#### **3.1.6 R&D Capability**

In June 2011, CNR CRC was recognized by the Ministry of Industry and Information Technology and the Ministry of Finance as one of the first “National Model Enterprises of Technological Innovation” and become the only enterprise under CSR and CNR being so recognized. In March 2011, the Postdoctor Workstation of CNR CRC was honored as a “National Excellent Postdoctor Scientific Research Workstation.” In addition, the Company has been successively recognized by competent ministries and commissions of the state as one of the “Innovative Experimental Enterprise,” the “Innovative Enterprise of the States” and the “National Experimental Enterprises or Institutions in Respect of Intellectual Property Rights of the 4th Batch.” The product of the Company is entitled “National High Quality Well-known Products.”

#### **3.1.7 Technical Equipment**

Presently, CNR CRC’s equipment of critical processes is at the internationally leading level. The Company possesses specialized production facilities of the international level, such as the aluminum alloy car production line of the highest international level, the stainless steel car production line of the strongest capability, the truck welding line of the highest automation level, the most advanced painting line and the dynamic commissioning line of the fullest power supply modes, etc. In addition, the High Speed Vehicle Manufacturing Base, constructed by the CNR CRC in the Railway Transport Equipment Manufacturing Industry Park in Changchun Lvyuan District, is the specialized high speed EMU manufacturing base of the largest scale worldwide with the most advanced facilities presently.

#### **3.1.8 Fundamentals of Management**

Based on the core value of “Improving product quality,” CNR CRC strives to link the management system to the international standard while consolidating fundamental management. We are among the first in the industry in China who are successfully certified according to ISO 9001 quality system,

ISO 1002-1 metrology and inspection system, ISO 14001 environmental management system, OHSMS professional safety and health management system, IRIS international railway industry management system and German DIN 6700 quality system. In addition, CNR CRC takes the lead in the industry to implement the quality management concepts and methods such as SAP management system, lean management, P3E management, project management and “gate, milestone and point” management. The management capability of CNR CRC is always kept at the leading level in the industry.

### **3.1.9 Far-reaching Prospects**

The development strategy of “Moving in three steps” was proposed at the second Party Congress of the Company in Oct. 2009, which are: achieving sales income of CNY 15 billion and completing upgrading of main types of product by 2011; by 2015, it is to achieve sales income of CNY 30 billion and become a railway vehicle manufacturer with significant influence on the international market; by 2020, it is to become a top class enterprise in the international railway vehicle manufacturing industry, integrating four kinds of activities, namely complete vehicle sale, spare part production and supply, vehicle maintenance and service operation after sales service.

The development goal of the Company specified for the subsequent four years are: consolidating the “two great advantages” of domestic and international markets; establishing the three business fields of high speed vehicles, urban railway vehicles and trucks; achieving “three worldwide first classes” of production scale, vehicle product level and R&D and test capabilities; creating four large bases of high speed EMUs, railway vehicles, urban railway vehicles and trucks and build the Company into a railway vehicle manufacturer with strong international competitiveness.

In addition to the goals mentioned above, the income of employees is to be kept increasing continuously and stably so that they can lead a rich modern life.

For the last several years, the operating performance has set records successively. Currently, CNR CRC is, according to the latest market demand and development strategy, constructing four specialized manufacturing bases, namely of high speed EMUs, railway vehicles, urban railway vehicles and trucks, try to achieve “three worldwide first classes” of production scale, product level and R&D and test capabilities and work hard to build the Company into an international top class railway vehicle manufacturer.

### 3.2 HEAVY RAIL TRANSIT CAR CONTRACTS

Below is the RFP requirement for the heavy rail transit car contracts list of past performance:

Tab I.3 (a) Heavy Rail Transit Car Contracts

*List (in a matrix format) reliability information for all heavy rail transit contracts, of similar size, scope, and operating environment as described in Technical Specification Section 2 for the past ten (10) years and describe how these projects (e.g. duty cycles, climate, other) are similar to this procurement. Past ten (10) years shall include all contracts that were active at any time during the past ten (10) years, inclusive of warranty stage as well as any executed contracts during this period. For each entry, the Offeror shall:*

- *Include customer, type, quantity, major vendors, and a brief description of the vehicle (dimension, weight, capacities, features, etc.)*
- *Describe whether the vehicles delivered were an existing design or an entirely new design; and indicate the extent of the Offeror's design responsibility (i.e., total vehicle including carbody and all systems, carbody only, systems only etc.)*
- *Include the contractual reliability requirement (MDBF, MTBF, definition of failures, warranty period(s), etc.)*
- *Provide a description of the data collection process, the method of reliability calculation and sample of the raw defect history data*
- *Include actual reliability achieved at the end of the warranty period*
- *Include actual reliability currently being realized, if data is available*
- *Identify each project for which the actual vehicle level reliability has met or exceeded the requirements of T2.03.03.*
- *Submit a formal letter of concurrence from the listed customers for each listed project*
- *Provide current customer contact information for verification*
- *State the total length of every contract (closed and current) since 1995. Provide the date of Notice to Proceed and if closed, date of closeout.*

**Tab I.3(a) –Reliability Information for Heavy Rail Transit Cars**

Project Name: Beijing Metro 14#				Contract Year		2012 – 2014	
				Notice to Proceed		1/2012	
				Closeout		7/2014	
Transit Authority/Customer		Contact		Email		Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao		zhangbao_mrt@126.com		13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity		Dimensions (L x W)		
A type Stainless Steel Metro vehicle	38 trainsets	Tc: 37.2t Mp: 37.8t M: 37.66t	Tc : AW1 : 56 passengers AW2 : 310 passengers AW3 : 430 passengers Mp, M : AW1 : 56 passengers AW2 : 310 passengers AW3 : 430 passenge		Tc : 80.05 x 9.84 ft (24,400 x 3,000 mm) Mp, M: 74.80 x 9.84 ft (22,800 x 3,000 mm)		
List of Major Vendors							
Propulsion system: Jiangsu Bombardier Propulsion system Co.Ltd.		Brake system: Beijing Zongheng Electrical & Mechanical Technology Developmrny Co. Ltd.		Air conditioning: Huadong (Beijing) Transit Equipment Co.Ltd.		Door: Qingdao Sifang Faiveley Rail Brake Co.Ltd.	
Coupler: Qingdao Sirui Technology Co.Ltd.		Broadcast: Beijing Huagao Shiji Technology Co.Ltd					
Description of Vehicle (e.g. features, existing or new design, etc.)							
Max running speed is 80 km/h, configuration form is 4 motor car and 2 trail car (=Tc-Mp-T+M-Mp-Tc=) ; using overall stainless steel load bearing structure ; no painting on carbody surface ; meet the requirement of EN15227 for 25km/h entirety vehicle crush energy absorption ; front anti-climber integration energy absorption deformation tube, which can effect on anti-climbing and energy absorbing at the same time, using bolt to connect the anti-climber and carbody, which is easier to replace after damaging ; using modular design, using symmetrical layout on left-hand side and right-hand side of No.1 end and No.2 end, to improve interchangeability ; the steel structure is using entirety arc roof, no individual AC unit platform and pantograph platform ; using bolt to connect cab frame and carbody, which is easier for maintenance after accident ;							
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)							
Responsible for entire vehicle design and system integration; independent design and manufacture carbody stainless steel structure and trucks; propulsion, brake and coupler system etc are integrated.							
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)							
Overall stainless steel load bearing; entirety vehicle crush energy absorption. Electric propulsion system is VVVF control AC drive system; electric brake system is the combination of regeneration and brake resistor Brake system use microcomputer control direct EP brake, foundation brake use tread brake.							
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)		
	Km	Miles					
Vehicle	65371 Miles	104594 km		Failure level 1: rescue, off line, failed	2years		



				to leave depot on time; MDBF for every trainset is 100,000 miles	
Vehicle			14942 hours	Failure level 2: delay 5mins. MTBF of every trainset is 2500 hours.	2years
Propulsion system	163428 Miles	261486 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Propulsion system			14942 hours	Failure level 2: delay 5mins.	2years
Auxiliary power supply system	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Auxiliary power supply system			14942 hours	Failure level 2: delay 5mins.	2years
Network	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Network			14942 hours	Failure level 2: delay 5mins.	2years
Brake system	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Brake system			14942 hours	Failure level 2: delay 5mins.	2years
Door system	163428 Miles	261486 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Door system			7471 hours	Failure level 2: delay 5mins.	2years
AC system	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
AC system			14942 hours	Failure level 2: delay 5mins.	2years
Communication system	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Communication system			14942 hours	Failure level 2: delay 5mins.	2years
Coupler	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Coupler			14942 hours	Failure level 2: delay 5mins.	2years
Trucks	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Trucks			14942 hours	Failure level 2: delay 5mins.	2years
Interiors	326857 Miles	522971 km		Failure level 1: rescue, off line, failed to leave depot on time	2years
Interiors			14942 hours	Failure level 2: delay 5mins.	2years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<b>1. Determination during validation period</b> Reliability performance has been evaluated by the validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset					

will run 120,000km, the entirety trainset will be the target. This project has not started to validate.

**2. Failure data collection**

During reliability validation, CNR CRC is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and produce a report monthly, the recorded data has to include following parameter, but not limited: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant data, e.g. weather, route condition, and the detail information the driver who is driving the failure train.

**3. Reliability validation calculation and judgment standard for “accept/reject”**

According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient  $C$  is 90%, the risk of user  $\beta=1-C=10\%$  timing test plan, regarding to the occurred failure and analysis communicate and discuss with customer, and to identify the responsibility of the failures.

Reliability at End of Warranty Period	Current Reliability	Met/Exceed Reliability Requirement in T2.03.03
not available	met the contract requirement	Yes

Project Name: Beijing Metro 6#				Contract Year		2011 – 2014	
				Notice to Proceed		2/2011	
				Closeout		12/2014	
Transit Authority/Customer		Contact		Email		Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao		zhangbao_mrt@126.com		13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity		Dimensions (L x W)		
B type Stainless Steel vehicle	64 trainsets	Tc: 33t Mp: 33.7t M: 33.1t	Tc: AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers Mp, M: AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers		Tc: 65.49 x 9.19 ft (19,960 x 2,800 mm) Mp, M: 62.34 x 9.19 ft (19,000 x 2,800 mm)		
List of Major Vendors							
Propulsion system: Shanghai Alstom Transport Electric Equipment Co., Ltd.		Brake system: Knorr-Bremse		Air conditioning: China Railway Vehicle (Beijing) Transit Equipment Co.Ltd.		Door: Qingdao Sifang Faiveley Rail Brake Co.Ltd.	
Coupler: Dana Coupler System Technology (Shanghai) Co., Ltd.		Broadcast: Beijing Huagao Shiji Technology Co.Ltd					
Description of Vehicle (e.g. features, existing or new design, etc.)							
The maximum operating speed is 100km/h. The paint-free stainless steel car body is taken. The strength of the car body is designed to meet the EN12663 Structural Standard of Bodies and the compression load reaches 800KN. The planing anti-creep energy absorbing device structure is designed and connected with the car body with bolts and easy to replace after it is damaged. The head forms the independent module and it is assembled with the car body after its self-reassembly is completed. The headlamp, tail light and window wiper are installed to the external part of the vehicle, facilitating the maintenance and overhaul of the equipment. The wheel disc brake bogie with the wheel base of 2300mm is taken. The saloon door takes the double-leaf electric built-in sliding door and the side door of the driver's cab takes the single electric sliding door. The air conditioning unit is installed on top of the ceiling arc, with the lower air outlet and return on top of the vehicle. The gangway in the flexible side guard plate structure is taken. The partition wall between the saloon and the driver's cab is set with the relevant end door of the front escape door, facilitating the passenger's barrier-free access. If any emergency occurs, the passengers can escape from the driver's cab. The electric traction system is the VVVF-controlled AC transmission system and the electric brake is the regenerative brake. The microcomputer-controlled closed-loop numerical and simulated electro-pneumatic brake system and the foundation brake is the disc brake.							
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)							
It is responsible for the design and system integration of the whole vehicle. The carbody steel structure, bogies and train network are completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.							
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)							
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.							
System	Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Definition of Failure			Warranty Period (s)	

	km	Miles			
Vehicle	160130	100081		Failure level 1: Service failure rescue, off line, failed to leave depot on time Target: MDBF for every trainset is 100000 km.	2 years
Vehicle			8693	Failure level 2: Delay failure, delay for 3min. Target: MDBF for every trainset is 3000h.	2 years
Propulsion system	1216987	760617		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Propulsion system			43464	Failure level 2: Delay failure, delay for 3min.	2 years
Auxiliary power supply system	1216987	760617		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Auxiliary power supply system			28976	Failure level 2: Delay failure, delay for 3min.	2 years
Network	2028312	1267695		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Network			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years
Brake system	608494	380309		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Brake system			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years
Door system	1216987	760617		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Door system			28976	Failure level 2: Delay failure, delay for 3min.	2 years
AC system	6084937	3803086		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
AC system			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years
Communication system	1014156	633848		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Communication system			43464	Failure level 2: Delay failure, delay for 3min.	2 years
Coupler	Over 6084938	Over 3803086		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Coupler			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years
Truck	3042469	1901543		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Truck			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years



Interiors	6084937	3803086		Failure level 1: Service failure ; rescue, off line, failed to leave depot on time	2 years
Interiors			Over 173855	Failure level 2: Delay failure, delay for 3min.	2 years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<p><b>1. Determination during validation period</b> Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.</p> <p><b>2. Failure data collection</b> During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the driver who is driving the failure train.</p> <p><b>3. Reliability validation calculation and judgment standard for "Accept/Reject"</b> According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user <math>\beta=1-C=10\%</math> timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.</p>					
<b>Reliability at End of Warranty Period</b>	<b>Current Reliability</b>	<b>Met/Exceed Reliability Requirement in T2.03.03</b>			
Not yet available	Met the contract requirement	Yes			

Project Name: Shenyang Metro Line 1				Contract Year		2006 – 2010	
				Notice to Proceed		12/2006	
				Closeout		3/2010	
Transit Authority/Customer		Contact		Email		Phone Number	
Shenyang Metro Group Co., Ltd.		Yang Pengfei		YanPengfeiCRC@163.com		13840519115	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity		Dimensions (L x W)		
B type Stainless Steel vehicle	23 trainsets	Tc: 32.1t T: 28t Mp: 34.6 t M: 34.3 t	Tc: AW1 : 36 passengers AW2 : 230 passengers AW3 : 290 passengers Mp, M, T: AW1 : 42 passengers AW2 : 245 passengers AW3 : 310 passengers		Tc: 63.98 x 9.19 ft (19,500×2,800 mm) Mp, M, T: 62.34 x 9.19 ft (19,000×2,800 mm)		
List of Major Vendors							
Propulsion system: Mitsubishi Electric Corporation		Brake system: Knorr-Bremse		Air conditioning: Shandong Langjin Technology Co., Ltd.		Door: Beijing Bode Traffic Equipment Co., Ltd.	
Coupler: Voith Turbo Power Transmission Shanghai Co. Ltd.		Broadcast: Tianjin Beihai Communication Technology Co., Ltd.					
Description of Vehicle (e.g. features, existing or new design, etc.)							
The typical B stainless steel vehicle and the paint-free carbody surface is taken. The electric traction system is the VVVF-controlled AC transmission system and the electric brakes combines the regenerative brake and brake resistance. The brake system is the microcomputer-controlled electro-pneumatic brake and the foundation brake is the pedal brake.							
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)							
It is responsible for the design and system integration of the whole vehicle. The steel structure of the car body, the interior decoration of the vehicle and bogies are completely independently designed and manufactured. Some main systems such as traction system, pantograph system, brake system, coupler system, air conditioning system and door system, etc. are integrated.							
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)							
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.							
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)		
	km	Miles					
Vehicle	306667	191667		Failure level 1: Service failure rescue, off line, failed to leave depot on time Target: MDBF for every trainset is 100000 km.	2 years		
Vehicle			8762	Failure level 2: Delay failure, delay for 3min. Target: MDBF for every trainset is 3000h.	2 years		
Propulsion system	1840000	1150000		Failure level 1: Service failure	2 years		

				rescue, off line, failed to leave depot on time	
Propulsion system			87619	Failure level 2: Delay failure, delay for 3min.	2 years
Auxiliary power supply system	1533333	958333		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Auxiliary power supply system			131429	Failure level 2: Delay failure, delay for 3min.	2 years
Network	4600000	2875000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Network			Over 262857	Failure level 2: Delay failure, delay for 3min.	2 years
Brake system	920000	575000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Brake system			262857	Failure level 2: Delay failure, delay for 3min.	2 years
Door system	1314286	821429		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Door system			32857	Failure level 2: Delay failure, delay for 3min.	2 years
AC system	Over 9200000	Over 5750000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
AC system			262857	Failure level 2: Delay failure, delay for 3min.	2 years
Communication system	Over 9200000	Over 5750000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Communication system			Over 262857	Failure level 2: Delay failure, delay for 3min.	2 years
Coupler	Over 9200000	Over 5750000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Coupler			Over 262857	Failure level 2: Delay failure, delay for 3min.	2 years
Truck	Over 9200000	Over 5750000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Truck			Over 262857	Failure level 2: Delay failure, delay for 3min.	2 years
Interiors	Over 9200000	Over 5750000		Failure level 1: Service failure rescue, off line, failed to leave depot on time	2 years
Interiors			Over 262857	Failure level 2: Delay failure, delay for 3min.	2 years

**Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)**
**1. Determination during validation period**

Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.

## 2. Failure data collection

During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the driver who is driving the failure train.

## 3. Reliability validation calculation and judgment standard for "Accept/Reject"

According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user  $\beta=1-C=10\%$  timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.

Reliability at End of Warranty Period	Current Reliability	Met/Exceed Reliability Requirement in T2.03.03
Failure Level 1 MDBF=306667 km Failure Level 2 MTBF=8762h	Met the contract requirement	Yes



Project Name: Chongqing Rail Transit Line 6				Contract Year		2010 – 2011	
				Notice to Proceed		3/2010	
				Closeout		9/2011	
Transit Authority/Customer		Contact		Email		Phone Number	
Chongqing Rail Transit Group Co., Ltd.		Wu Jing		WUJING@163.com.cn		13983115816	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity		Dimensions (L x W)		
B type Stainless Steel vehicle	21 trainsets	Tc : 34.3t Mp : 33.8t M : 33.2t	Tc: AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers Mp, M: AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers		Tc: 63.98 x 9.19 ft (19,500 x 2,800 mm) Mp, M: 62.34 x 9.19 ft (19,000 x 2,800 mm)		
List of Major Vendors							
Propulsion system: Zhuzhou Electric Locomotive Research Institute Co.Ltd.		Brake system: Beijing Zongheng Mechanical and Electrical Technology Development Co.		Air conditioning: Zhejiang Liebherr Zhongche Transportation Systems Co., Ltd		Door: Nanjing Kangni Mechanical&Electrical Co., Ltd.	
Coupler: CNR Sifang Rolling Stock Research Institute		Broadcast: Beijing Aotewei Technology Development General Corporation					
Description of Vehicle (e.g. features, existing or new design, etc.)							
The train takes the energy absorption structures of coupler crushing tube and car body front-end deformation area, etc., assuring the safety of passengers and the driver to the maximum extent; the structural strength of the car body meets the requirements of European EN12663 : 2000 “Structural Requirements of Railway Vehicle Bodies ” and the requirement of the longitudinal compression load of 800KN; the car body takes the paint-free stainless steel carbody structure, with some advantages such as high strength and strong corrosion resistance, etc. and reducing the environmental pollution caused by the paint maintenance; the trailer car with the driver's cab first takes the axle-disc brake; the operating speed of the bogie reaches 100km/h and the flange lubricating devices are set to the bogies of some trains; the electric traction system is VVVF-controlled AV transmission system and the electric brake is the form combining the regenerative brake and floor resistance absorption. The brake system takes the microcomputer-controlled electro-pneumatic brake. The foundation brakes are the axle-disc brake for the trailer car and the pedal brake for the motor car.							
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)							
It is responsible for the design and system integration of the whole vehicle. The steel structure of the car body, the interior decoration of the vehicle and bogies are completely independently designed and manufactured. Some main systems such as traction system, pantograph system, brake system, coupler system, air conditioning system and door system, etc. are integrated.							
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)							
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.							
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)		
	km	Miles					
Vehicle	471130	294457	13461	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years		

				MTBFS (Mean time between failures for service) over 3500h.	
Vehicle	361200	225750	10320	Delay less than 3min. MTBFS should not be less than 3000h.	2 years
Propulsion system	1806000	1128750	51600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Propulsion system	3612000	2257500	103200	Delay less than 3min.	2 years
Auxiliary power supply system	2167200	1354500	61920	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Auxiliary power supply system	602000	376250	17200	Delay less than 3min.	2 years
Network	2709000	1693125	77400	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Network	3612000	2257500	103200	Delay less than 3min.	2 years
Brake system	10836000	6772500	309600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Brake system	Over 10836000	Over 6772500	Over 309600	Delay less than 3min.	2 years
Door system	2709000	1693125	77400	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Door system	2709000	1693125	77400	Delay less than 3min.	2 years
AC system	10836000	6772500	309600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
AC system	Over 10836000	Over 6772500	Over 309600	Delay less than 3min.	2 years
Communication system	5418000	3386250	154800	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Communication system	5418000	3386250	154800	Delay less than 3min.	2 years
Coupler	Over 10836000	Over 6772500	Over 309600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Coupler	Over 10836000	Over 6772500	Over 309600	Delay less than 3min.	2 years
Truck	Over 10836000	Over 6772500	Over 309600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Truck	Over 10836000	Over 6772500	Over 309600	Delay less than 3min.	2 years
Interiors	Over 10836000	Over 6772500	Over 309600	Rescue, evacuation, off line, failed to leave depot on time, delay over 3min.	2 years
Interiors	Over 10836000	Over 6772500	Over 309600	Delay less than 3min.	2 years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<b>1. Determination during validation period</b>					
Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated					

by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.

## **2. Failure data collection**

During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the diver who is diving the failure train.

## **3. Reliability validation calculation and judgment standard for "Accept/Reject"**

According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user  $\beta=1-C=10\%$  timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.

<b>Reliability at End of Warranty Period</b>	<b>Current Reliability</b>	<b>Met/Exceed Reliability Requirement in T2.03.03</b>
Not yet available	Met the contract requirement	Yes

Project Name: Shenzhen Metro Line 3, New Procurement				Contract Year	20092011
				Notice to Proceed	12/2009
				Closeout	5/2011
Transit Authority/Customer		Contact	Email	Phone Number	
Shenzhen Metro Line 3 Investment Co., Ltd.		Li Guanpeng	Liguanpeng123@163.com.cn	15002052776	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
B type Stainless Steel vehicle	19 trainsets	Tc : 33t M : 33.1t	Tc: AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers M : AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc: 63.98 x 9.19 ft (19,500 x 2,800 mm) M: 62.34 x 9.19 ft (19,000×2,800mm)	
List of Major Vendors					
Propulsion system: Hyundai Group Korea		Brake system: Knorr-Bremse	Air conditioning: Zhejiang Liebherr Zhongche Transportation Systems Co., Ltd	Door: Beijing Bode Traffic Equipment Co., Ltd.	
Coupler: CNR Sifang Rolling Stock Research Institute		Broadcast: Guangzhou GlobalLink Co., Ltd.			
Description of Vehicle (e.g. features, existing or new design, etc.)					
When the vehicle is operated in the climatic conditions with a lot of overhead lines and typhoons in Shenzhen, it is required that the vehicle should have the high technical performances, safety performance and fashion. The design of the vehicle technically and fully represents the characteristics connecting with the technologies of the international advanced railway vehicle such as science and technology, human culture and environment friendliness, etc. The carbody steel structure is improved to meet the strength and rigidity requirements of the carbody structure with 8 sets of electric sliding doors. The electric system is the VVVF-controlled AC transmission system and the electric brake combines the regenerative brake and brake resistance. The brake system is the microcomputer-controlled electro-pneumatic brake and the foundation brake is the pedal brake.					
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)					
Responsible for the design and system integration of the whole vehicle. The carbody steel structure, bogies and train network are completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.					
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)					
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.					
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)
	km	Miles			



Vehicle	206052	128782		Not suitable for continuous service/(Passengers) cannot be sent Target: 0.41 pce per million km./car, i.e. MDBF=120000km	2 years
Vehicle	154539	96587		Operation interrupted, delay for 2min. or above. Target: 2.4 pce per million km./car, i.e. MDBF=70000km	2 years
Propulsion system	1030259	643912		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Propulsion system	2060518	1287824		Operation interrupted, delay for 2min. or above.	2 years
Auxiliary power supply system	1545389	965868		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Auxiliary power supply system	1030259	643912		Operation interrupted, delay for 2min. or above.	2 years
Network	2060518	1287824		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Network	2060518	1287824		Operation interrupted, delay for 2min. or above.	2 years
Brake system	1545389	965868		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Brake system	2060518	1287824		Operation interrupted, delay for 2min. or above.	2 years
Door system	1030259	643912		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Door system	412104	257565		Operation interrupted, delay for 2min. or above.	2 years
AC system	3090778	1931736		Not suitable for continuous service/(Passengers) cannot be sent	2 years
AC system	6181555	3863472		Operation interrupted, delay for 2min. or above.	2 years
Communication system	2060518	1287824		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Communication system	1030259	643912		Operation interrupted, delay for 2min. or above.	2 years
Coupler	Over 6181555	Over 3863472		Not suitable for continuous service/(Passengers) cannot be sent	2 years
Coupler	Over 6181555	Over 3863472		Operation interrupted, delay for 2min. or above.	2 years
Truck	6181555	3863472		Not suitable for continuous	2 years

				servic/(Passengers) cannot be sent	
Truck	3090778	1931736		Operation interrupted, delay for 2min. or above.	2 years
Interiors	6181555	3863472		Not suitable for continuous servic/(Passengers) cannot be sent	2 years
Interiors	3090778	1931736		Operation interrupted, delay for 2min. or above.	2 years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<p><b>1. Determination during validation period</b> Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.</p> <p><b>2. Failure data collection</b> During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the diver who is diving the failure train.</p> <p><b>3. Reliability validation calculation and judgment standard for "Accept/Reject"</b> According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user <math>\beta=1-C=10\%</math> timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.</p>					
<b>Reliability at End of Warranty Period</b>	<b>Current Reliability</b>	<b>Met/Exceed Reliability Requirement in T2.03.03</b>			
Not yet available	Met the contract requirement	Yes			

Project Name: Brazil Rio de Janeiro Metro 1A				Contract Year	20092013
				Notice to Proceed	11/2009
				Closeout	3/2013
Transit Authority/Customer		Contact	Email	Phone Number	
China National Machinery Imp. & Exp. (Group) Corp.		Wei Bing	Weibin-crc@163.com.cn	010-68991796	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type Stainless Steel vehicle	19 trainsets	Tc: 41t M: 40.5t	T : AW1 36 passengers AW2 280 passengers AW3 350 passengers M : AW1 36 passengers AW2 310 passengers AW3 385 passengers	T: 69.62 x 10.14 ft (21,220 x 3,090 mm) M: 69.62 x 10.14 ft (21,220 x 3,090 mm)	
List of Major Vendors					
Propulsion system: Mitsubishi Electric Corporation		Brake system: Knorr-Bremse	Air conditioning: Sigma Coachair Group Pty Ltd. UI CO	Door: IFE-VICTALL Railway Vehicle Door Systems (Qingdao) Co., Ltd.	
Coupler: Wabtec Golden Bridge Transportation Technology (Hangzhou) Co., ltd.		Broadcast: ST Electronics (Shanghai) Co., Ltd.			
Description of Vehicle (e.g. features, existing or new design, etc.)					
Refer to the NFPA-130 standard for the fire protection of the whole vehicle, presenting the higher requirements for the structure and choice of materials. The broad-gauge (1600 mm) bogie is independently designed. The big-openness three-door is taken. The electric traction system is the VVVF-controlled AC transmission system and the electric brakes combines the regenerative brake and brake resistance. The brake system is the microcomputer-controlled electro-pneumatic brake and the foundation brake is the disc brake.					
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)					
It is responsible for the design and system integration of the whole vehicle. The carbody steel structure and bogies are completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.					
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)					
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.					
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)
	km	Miles			
Vehicle	164252	102658		Rescue, evacuation, off-line, and delay for 5min.or above , 0.167 pce per million km./car (About 27800 km./train for a 6-car	2 years

				formation)	
Vehicle	232691	145432		Delay for 5min.or above, 1 pce per million km./car (About 167000 km./train for a 6-car formation)	2 years
Propulsion system	1396144	872590		Rescue, evacuation, off-line, and delay over 5min.	2 years
Propulsion system	1396144	872590		Delay for 5min.or above	2 years
Auxiliary power supply system	558458	349036		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Auxiliary power supply system	Over 2792288	Over 1745180		Delay for 5min.or above	2 years
Network	2792288	1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Network	2792288	1745180		Delay for 5min.or above	2 years
Brake system	1396144	872590		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Brake system	1396144	872590		Delay for 5min.or above	2 years
Door system	558458	349036		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Door system	465381	290863		Delay for 5min.or above	2 years
AC system	Over 2792288	Over 1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
AC system	Over 2792288	Over 1745180		Delay for 5min.or above	2 years
Communication system	2792288	1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Communication system	2792288	1745180		Delay for 5min.or above	2 years
Coupler	Over 2792288	Over 1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Coupler	Over 2792288	Over 1745180		Delay for 5min.or above	2 years
Truck	2792288	1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
Truck	Over 2792288	Over 1745180		Delay for 5min.or above	2 years
interiors	Over 2792288	Over 1745180		Rescue, evacuation, off-line, and delay for 5min.or above	2 years
interiors	Over 2792288	Over 1745180		Delay for 5min.or above	2 years



**Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)**

**1. Determination during validation period**

Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.

**2. Failure data collection**

During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the diver who is diving the failure train.

**3. Reliability validation calculation and judgment standard for "Accept/Reject"**

According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user  $\beta=1-C=10\%$  timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.

<b>Reliability at End of Warranty Period</b>	<b>Current Reliability</b>	<b>Met/Exceed Reliability Requirement in T2.03.03</b>
Not yet available	Met the contract requirement	Yes

Project Name: Saudi Arabia Metro				Contract Year	2009 – 2010
				Notice to Proceed	4/2009
				Closeout	11/2010
Transit Authority/Customer		Contact	Email	Phone Number	
China Railway Construction Corporation Limited		Wei Bing	Weibing-zt@163.com.cn	010-68991796	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type aluminum alloy vehicle	17 trainsets	Tc : 37.2t Mp : 37.8t M : 37.66t	Tc : AW0 : 45 passengers AW1 : 133 passengers AW2 : 244 passengers AW3 : 310 passengers AW4 : 398 passengers Mp、 M : AW0 : 45 passengers AW1 : 138 passengers AW2 : 254 passengers AW3 : 323 passengers AW4 : 416 passengers	Tc: 80.02 x 10.14 ft (24,390 x 3,091 mm) Mp, M: 74.80 x 10.14 ft (22,800 x 3,091mm)	
List of Major Vendors					
Propulsion system: Bombardier		Brake system: Knorr-Bremse	Air conditioning: Guangzhou Cold Huaxu Refrigeration and Air Conditioning Industry Co., Ltd.	Door: Beijing Bode Traffic Equipment Co., Ltd.	
Coupler: Voith Turbo Scharfenberg GmbH & Co.		Broadcast: ST Electronics (Shanghai) Co., Ltd.			
Description of Vehicle (e.g. features, existing or new design, etc.)					
The maximum operating speed is 80km/h. The marshalling form is the long and big one including 8 motor cars and 4 trailer cars (+Tc-Mp-M-M-Mp- M-M- Mp- M-M- Mp-Tc+) ; meet the high-performance, safe and reliable operation in the environment of high temperature of 55℃ and a lot of wind and sand; the aluminum alloy load bearing structure as a whole is taken; the carbody structural strength meets the EN 12663 standard; meet the 25km/h collision energy absorbing requirement of EN15227 as a whole; the front anti-creeper is integrated with the energy absorbing crushing tube, playing the roles of anti-creep and energy absorption in the collision of the vehicles; the modularized design is taken to keep the symmetrical layout of B-end and A-end and B-side and A-side of the vehicle and improve the interchangeability; the unit platform and pantograph unit are separately set; the head framework is connected with the car body with bolts, facilitating maintenance and repair after an accident occurs; the bogie with the axle load of 17 tons is taken; the wind and sand resistant, wearing and ultraviolet resistance paint is taken; the electric traction system is the VVVF-controlled AC transmission system and the electric brakes combines the regenerative brake and brake resistance. The brake system is the microcomputer-controlled straight electro-pneumatic brake and the foundation brake is the wheel disc brake.					
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)					
It is responsible for the design and system integration of the whole vehicle. The carbody steel structure and bogies are completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.					
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)					
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.					

System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)
	km	Miles			
Vehicle	Over 841011	Over 525632	Over 24029	Rescue, MTBF=25000h.	3 years
Vehicle	841011	525632	24029	Delay for 5min.or above, MTBF-2850h or MDBF=100000km.	3 years
Propulsion system	Over 841011	Over 525632	Over 24029	Rescue	3 years
Propulsion system	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Auxiliary power supply system	Over 841011	Over 525632	Over 24029	Rescue	3 years
Auxiliary power supply system	841011	525632	24029	Delay for 5min.or above	3 years
Network	Over 841011	Over 525632	Over 24029	Rescue	3 years
Network	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Brake system	Over 841011	Over 525632	Over 24029	Rescue	3 years
Brake system	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Door system	Over 841011	Over 525632	Over 24029	Rescue	3 years
Door system	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
AC system	Over 841011	Over 525632	Over 24029	Rescue	3 years
AC system	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Communication system	Over 841011	Over 525632	Over 24029	Rescue	3 years
Communication system	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Coupler	Over 841011	Over 525632	Over 24029	Rescue	3 years
Coupler	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
Truck	Over 841011	Over 525632	Over 24029	Rescue	3 years
Truck	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years
interiors	Over 841011	Over 525632	Over 24029	Rescue	3 years
interiors	Over 841011	Over 525632	Over 24029	Delay for 5min.or above	3 years

**Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)**

**1. Determination during validation period**

Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.

**2. Failure data collection**

During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the diver who is diving the failure train.

**3. Reliability validation calculation and judgment standard for "Accept/Reject"**

According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user  $\beta$  = 1-C=10% timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.

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Reliability at End of Warranty Period	Current Reliability	Met/Exceed Reliability Requirement in T2.03.03
1. No failure demanding rescue 2. One delay over 5min., MDBF is over 841011km	Met the contract requirement	Yes



Project Name: Hong Kong Metro West Island Line				Contract Year		2008 – 2012	
				Notice to Proceed		7/2008	
				Closeout		8/2012	
Transit Authority/Customer		Contact		Email		Phone Number	
MTR Corporation		Zheng Jianwei		Zhengweijian@163.com.cn		13756132458	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity		Dimensions (L x W)		
A type Stainless Steel vehicle	15 trainsets	Tc : 39t Mp1 : 42.5t Mp2 : 42.5t M1 : 42.5t M2 : 42t	M1 zero load M2 average load of the train, 200 passengers each M3 no application M4 full load of the train, 312 passengers each M5 overload of the train, 450 passengers each		Tc:	77.99 x 10.24 ft (23,770 x 3,120 mm)	
					Mp:	74.08 x 10.24 ft (22,580 x 3,120 mm)	
					M:	74.34 x 10.24 ft (22,660 x 3,120 mm)	
List of Major Vendors							
Propulsion system: Mitsubishi Electric Corporation		Brake system: Knorr-Bremse		Air conditioning: Sigma Coachair Group Pty Ltd. UI CO		Door: Qingdao Sifang Faiveley Rail Brake Co.Ltd.	
Coupler: Faiveley Transport Witten GmbH		Broadcast: ST Electronics (Shanghai) Co., Ltd.					
Description of Vehicle (e.g. features, existing or new design, etc.)							
The maximum operating speed is 80km/h. The marshalling form is 6 motor cars and 2 trailer cars (+Tc—MP2—M2=M1—MP1=M2—MP2—Tc+); the stainless steel load bearing structure as a whole is taken; the carbody surface is paint-free; the carbody strength meets EN12663 P II; the front end is set with the anti-creeper, playing the roles of anti-creep and energy absorption in the collision of the vehicles. The interior decoration of the vehicle is designed to be simple, beautiful and top-grade and the interior decoration of the vehicle takes the stainless steel sand-blast surface seats, including the phenol aldehyde side wall, honeycomb ceiling, GRP lampshade, stainless steel embossed handrail and integrated gangway side wall board, meeting the fire protection standard of BS6853 1A. The train is marshaled with 8 cars, divided into 3 units. After the train is de-marshalled, 3 units can be separately controlled and operated. The electric traction system is the VVVF-controlled AC transmission system and the electric brakes combines the regenerative brake and brake resistance. The air brake of the train takes the simulated electro-pneumatic brake system and the foundation brake is the wheel disc brake.							
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)							
It is responsible for the design and system integration of the whole vehicle. The carbody steel structure and bogies are completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.							
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)							
Stainless steel load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.							
System	Mean Distance Between Failure (MDBF)		Mean Time Between Failure (MTBF)	Definition of Failure	Warranty Period(s)		
	km	Miles					
Vehicle	24199	15124		Accidents: All failure events (Rescure, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years		

				Target: 6 pcs per million km./train, i.e.MDBF=20833km	
Vehicle	394093	246308		Delay for 2min. or above Target: 1.82 pcs per million km./train, i.e.MDBF=68681km	6 years
Vehicle	1379326	862079		Delay for 5min. or above Target: 0.4 pce per million km./train, i.e.MDBF=312500km	6 years
Propulsion system	689663	431039		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Propulsion system	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
Propulsion system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Auxiliary power supply system	551730	344832		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Auxiliary power supply system	2758652	1724158		Delay for 2min. or above	6 years
Auxiliary power supply system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Network	1379326	862079		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Network	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
Network	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Brake system	212204	132628		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Brake system	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
Brake system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years

Door system	137933	86208		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Door system	551730	344832		Delay for 2min. or above	6 years
Door system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
AC system	919551	574719		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
AC system	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
AC system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Communication system	131364	82103		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Communication system	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
Communication system	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Coupler	Over 2758652	Over 1724158		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Coupler	2758652	1724158		Delay for 2min. or above	6 years
Coupler	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
Truck	2758652	1724158		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years
Truck	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
Truck	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
interiors	459775	287360		Accidents: All failure events (Rescue, evacuation, changing train at terminal, train not to depart, and delay for 2min. or above)	6 years

interiors	Over 2758652	Over 1724158		Delay for 2min. or above	6 years
interiors	Over 2758652	Over 1724158		Delay for 5min. or above	6 years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<p><b>1. Determination during validation period</b> Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.</p> <p><b>2. Failure data collection</b> During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the diver who is diving the failure train.</p> <p><b>3. Reliability validation calculation and judgment standard for "Accept/Reject"</b> According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user <math>\beta=1-C=10\%</math> timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.</p>					
<b>Reliability at End of Warranty Period</b>		<b>Current Reliability</b>	<b>Met/Exceed Reliability Requirement in T2.03.03</b>		
Not yet available		Met the contract requirement	Yes		



Project Name: Bangkok BTS Metro Project				Contract Year	2007 – 2011
				Notice to Proceed	9/2007
				Closeout	11/2011
Transit Authority/Customer		Contact	Email	Phone Number	
Bargkok Mass Transit Sysrem Public Company Limitedl(BTSC)		Mr.Jarubodee	www.bls.co.th	(662)6177300	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type stainless steel vehicle	48 cars	Tc: 35.5t M: 37.6t	Tc: AW1 : 42 passengers AW2 : 161 passengers AW3 : 320 passengers M1, M2: AW1 : 42 passengers AW2 : 170 passengers AW3 : 341 passengers	Tc: 67.22 x 10.24 ft (20,490 x 3,120 mm) M1, M2: 74.08 x 10.24 ft (20,580 x 3,120 mm)	
List of Major Vendors					
Propulsion system: Bombardier		Brake system: Knorr-Bremse		Air conditioning: Shanghai Faiveley Railway Technology Co. ltd	
Coupler: Voith Turbo Scharfenberg GmbH & Co.		Broadcast: ST Electronics (Shanghai) Co., Ltd.		Door: Qingdao Sifang Faiveley Rail Brake Co., Ltd.	
Description of Vehicle (e.g. features, existing or new design, etc.)					
The maximum operating speed is 80km/h. The marshalling form is 2 motor cars and 2 trailer cars (=Tc-M-M-Tc=); the stainless steel load bearing structure as a whole is taken; the carbody surface is painted; meet the energy absorption requirement that a 6-car train collides in AW0 with a static train in AW0 ; the front end and the end of the vehicle are set with the anti-creepers; the modularized design is taken to keep the symmetrical layout of B-end and A-end and B-side and A-side of the vehicle and improve interchangeability; the brand-new side sliding escape door and extroversion no-shelter emergency evacuation stair is taken; the high-voltage current collection is from the lower part of the three-rail, DC750V. The electric traction system is the VVVF-controlled AC transmission system and the electric brakes combines the regenerative brake and brake resistance. In addition, the vehicle is equipped with the battery traction function. It can be operated for 300m at maximum. The brake system is the microcomputer-controlled straight electro-pneumatic brake and the foundation brake is the wheel disc brake.					
Description of CNR CRC's Design Responsibilities (e.g. total vehicle, carbody and systems, carbody only, system only, etc.)					
It is responsible for the design and system integration of the whole vehicle. The carbody steel structure is completely independently designed and manufactured. Some main systems of traction, brake and couplers, etc. are integrated.					
Description How Project is related to this MBTA Project (e.g. duty cycle, climate, etc.)					
Load bearing as a whole; the collision energy absorption of the whole vehicle is taken into account.					
System	Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Definition of Failure		Warranty Period(s)

	km	Miles			
Vehicle	4742924	2964328		Rescue, 0.1 pce per million km./train, i.e. : MDBF=2500000km	2 years
Vehicle	296433	185270		Evacuated nearby, 1pce per million km./train, i.e. : MDBF=250000km	2 years
Vehicle	175664	109790		Delay over 5min., 3.3 pcs per million km./train, i.e. : MDBF=76000km	2 years
Vehicle	278996	174372		Train not departed over 5min., 10pce per million km./train, i.e. : MDBF=2500	2 years
Propulsion system	Over 4742924	Over 2964328		Rescue	2 years
Propulsion system	1580975	988109		Evacuated nearby	2 years
Propulsion system	790487	494055		Delay over 5min.	2 years
Propulsion system	1580975	988109		Train not departed over 5min.	2 years
Auxiliary power supply system	4742924	2964328		Rescue	2 years
Auxiliary power supply system	2371462	1482164		Evacuated nearby	2 years
Auxiliary power supply system	2371462	1482164		Delay over 5min.	2 years
Auxiliary power supply system	4742924	2964328		Train not departed over 5min.	2 years
Network	Over 4742924	Over 2964328		Rescue	2 years
Network	4742924	2964328		Evacuated nearby	2 years
Network	4742924	2964328		Delay over 5min.	2 years
Network	Over 4742924	Over 2964328		Train not departed over 5min.	2 years
Brake system	Over 4742924	Over 2964328		Rescue	2 years
Brake system	4742924	2964328		Evacuated nearby	2 years
Brake system	4742924	2964328		Delay over 5min.	2 years
Brake system	4742924	2964328		Train not departed over 5min.	2 years
Door system	Over 4742924	Over 2964328		Rescue	2 years

Door system	2371462	1482164		Evacuated nearby	2 years
Door system	948585	592866		Delay over 5min.	2 years
Door system	2371462	1482164		Train not departed over 5min.	2 years
AC system	Over 4742924	Over 2964328		Rescue	2 years
AC system	4742924	2964328		Evacuated nearby	2 years
AC system	4742924	2964328		Delay over 5min.	2 years
AC system	790487	494055		Train not departed over 5min.	2 years
Communication system	Over 4742924	Over 2964328		Rescue	2 years
Communication system	Over 4742924	Over 2964328		Evacuated nearby	2 years
Communication system	Over 4742924	Over 2964328		Delay over 5min.	2 years
Communication system	Over 4742924	Over 2964328		Train not departed over 5min.	2 years
Coupler	Over 4742924	Over 2964328		Rescue	2 years
Coupler	Over 4742924	Over 2964328		Evacuated nearby	2 years
Coupler	Over 4742924	Over 2964328		Delay over 5min.	2 years
Coupler	4742924	2964328		Train not departed over 5min.	2 years
Truck	Over 4742924	Over 2964328		Rescue	2 years
Truck	Over 4742924	Over 2964328		Evacuated nearby	2 years
Truck	Over 4742924	Over 2964328		Delay over 5min.	2 years
Truck	Over 4742924	Over 2964328		Train not departed over 5min.	2 years
interiors	Over 4742924	Over 2964328		Rescue	2 years
interiors	Over 4742924	Over 2964328		Evacuated nearby	2 years
interiors	4742924	2964328		Delay over 5min.	2 years
interiors	4742924	2964328		Train not departed over 5min.	2 years

APS	Over 4742924	Over 2964328		Rescue	2 years
APS	592866	370541		Evacuated nearby	2 years
APS	592866	370541		Delay over 5min.	2 years
APS	2371462	1482164		Train not departure over 5min.	2 years
<b>Description of Data (e.g. collection process, reliability calculation, raw defect history data, etc.)</b>					
<p><b>1. Determination during validation period</b> Reliability performance has been evaluated by validating the running miles of the trainset being in service during test period, and the running time has been calculated by the average speed theoretical calculation. In general the early stage failures are not on the scope of this validation period. If there is not special request of start point of the reliability validation, both parts can mutually agree with the period of validation. Normally the validation period will last 12 months, and the trainset will run 120,000km, the entirety trainset fleet will be the target.</p> <p><b>2. Failure data collection</b> During reliability validation, CNR is using the FRACAS system which is developed by CNR CRC and service proven to failures closed-loop management, and issue a report monthly, the recorded information has to include, but not limited the following parameters: Train number, time of failure, accumulative mileage, failure parts and the system they belong to, failure description, failure reason, the impacts on system and service, the measures took immediately, and other relevant date, e.g. weather, route condition, and the detail information the driver who is driving the failure train.</p> <p><b>3. Reliability validation calculation and judgment standard for "Accept/Reject"</b> According to MIL-HDBK-781A, in the range of reliability validation the minimum single side confidence coefficient C is 90%, the risk of user <math>\beta=1-C=10\%</math> timing test plan, it is to execute discussion and analysis with the customer regarding to the occurred failure per month, and to identify the responsibility of the failures.</p>					
<b>Reliability at End of Warranty Period</b>		<b>Current Reliability</b>		<b>Met/Exceed Reliability Requirement in T2.03.03</b>	
Not yet available		Met the contract requirement		Yes	



### 3.3 OFFEROR AND MAJOR SUBCONTRACTORS PAST PERFORMANCE

Below is the RFP requirement for the offeror and major subcontractors past performances:

Tab I.3 (b) Offeror and Major Subcontractors Past Performance

*List (in a matrix format) the service proven reliability of each proposed major subcontractor for all comparable programs and service environment as described in Technical Specification Section 2 over the past ten (10) years. Past ten (10) years shall include all contracts that were active at any time during this period. Major systems and/or subsystems shall, at a minimum, include those identified in T2.03.03. Cited reliability data shall be for major systems and/or subsystems which are fundamentally identical to that being proposed for this contract. Should the proposed system and/or subsystem be newly developed for this program, the Offeror shall provide reliability data for the most recent, technological predecessor to that which is being proposed. The proposed major systems and/or subsystems and their suppliers shall be those that the Offeror shall use, should they be successful. For each entry, the Offeror shall include:*

- *Reliability data provided shall be limited to those previous programs where a fundamentally identical system and/or subsystem has met or exceeded the reliability goals requirements of T2.03.03.*
- *Include the contractual reliability requirements (MDBF, MTBF, definition of failures, warranty period(s), etc.)*
- *A description of the data collection process, the method of reliability calculation and sample of the raw defect history data*
- *Actual reliability achieved at the end of the warranty period*
- *Actual reliability currently being realized, if data is available*
- *A formal letter of concurrence from the listed customers for each listed project*
- *A current customer contact information for verification*

CNR has requested the past performance data of their suppliers as part of this proposal RFP requirement. The information that has been gathered is all the data that the suppliers were able, or prepared, to supply. If data is shown as “unavailable”, the suppliers themselves were not able to provide or find the information for CNR as required by the proposal RFP. CNR remains committed to delivering a product with, at a minimum, the expected reliability of the MBTA. Further CNR is prepared to track reliability data for the benefit of MBTA and future customers.

**Tab I.3(b) –Service Proven Reliability of Proposed Major Subcontractor**

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
COUPLER & DRAFT GEAR													
Wabtec: Coupler													
NYCT R142 1998-2005 NYCT		M. Wetherall Mike.wehterall@nyct.com 718-694-4460			1,000,000 miles	MDBCF 3,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service	<b>Data Gathering:</b> Vapor receives failure information from the Vapor field service team, the Vapor material and return process, and directly from the Carbuilder or Customer. Vapor receives the car fleet information regarding the number of cars in service and the mileage run from the Carbuilder. Vapor receives the initial relevant failures assigned by the Carbuilder. Relevant information is recorded into an electronic form which is compatible with the RAMS database. <b>Data Analysis:</b> This information is reviewed and categorized by a reliability engineer. The reliability engineer will cross check the in service failure information with the internal repair information. The failures and repairs are categorized in the FRACAS RAMS database. The Carbuilder relevant failures are reviewed and either accepted as part of the Vapor door scope or assigned a categorization of Carbuilder responsibility or of passenger responsibility. The failures are then reviewed with the Carbuilder's reliability engineer for data consolidation and confirmation. A review of the data over time will typically yield a door system reliability performance curve and a Vapor responsibility reliability performance curve. These	MDBF 14,320,000 miles	Data Unavailable	
		Mr. G. Sansone 717-694-4484				MDBF 6,000,000 miles							
NYCT R142A/R142S 1999-2005 NYCT		M. Wetherall Mike.wehterall@nyct.com 718-694-4460			1,000,000 miles	MDBF 6,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service		MDBF 26,959,000 miles	Data Unavailable	
		Mr. G. Sansone 717-694-4484											
NYCT R143 2001-2005 NYCT		M. Wetherall Mike.wehterall@nyct.com 718-694-4460			1,000,000 miles	MDBF 6,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service		MDBF 9,064,000 miles	Data Unavailable	
		Mr. G. Sansone 717-694-4484											
NYCT R160 2003 NYCT		M. Wetherall Mike.wehterall@nyct.com 718-694-4460			Unavail.	Unavail.	Unavail.	2 Yrs.	Not Disclosed		MDBSCF 3,048,780 miles MDBF 38,461,545 miles	Data Unavailable	
MBTA #5 Blue Line MBTA		S. Adkins sadkins@mbta.com 617-293-4635			Unavail.	Unavail.	Unavail.	2 Yrs.	Not Disclosed		Unavail.	Data Unavailable	
PATH PA5 2009 PATH		D. Dreisbach ddreisbach@panynj.gov 973-350-2854			Unavail.	Unavail.	Unavail.	2 Yrs.	Not Disclosed		MDBF 1,727,116 miles (A-Car) MDBF 1,149,425 miles (C-Car)	Data Unavailable	

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
											performance curves are compared to the Contractual reliability requirement. If the reliability is below the Contractual reliability requirement, trends are analyzed and areas of improvement are identified to the Vapor project team for improvement resolution and communication to the customer.		
<b>PASSENGER DOORS &amp; CONTROLS</b>													
<b>Faiveley: Door Systems, Door Open Pushbuttons interior/exterior</b>													
Montreal MPM 10 2014 Montreal STM			Bev Olson bev.olson@ ca.transport.bombardier.com 807-473-3407			Not Disclosed	240,000 miles	Not Req'd	Unavail.	Electronic door control, Wiring chain assembly, Tooth belt, Sensitive edge cell assembly, Lock out device failure	Description not provided	Data Unavailable	Data Unavailable
Maryland Multi-level 2014 Maryland MTA			Kari Rasco kari.rasco@ us.transpot.bombardier.com 518-566-5218			Not Disclosed	165,000 miles	Not Req'd	Unavail.		Description not provided	Data Unavailable	Data Unavailable
NJT Multi-level (Option 2) 2013 NJT			Tom Rutkowski 201-955-5900			Not Disclosed	165,000 miles	190,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
SEPTA SL V 2011 SEPTA			Dan J Gibbone dgibbone@septa.org 215-580-8030			Not Disclosed	65,000 miles	Not Req'd	Unavail.		Description not provided	Data Unavailable	Data Unavailable
AMT Multi-level 2009 AMT			Louis Szabo lszabo@amt.qc.ca 514-287-2464			Not Disclosed	170,000 miles	205,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
NJT Multi-level (Option 1) 2008 NJT			Tom Rutkowski 201-955-5900			Not Disclosed	165,000 miles	190,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
LACMTA P2550 2007 LACMTA			Not Disclosed			Not Disclosed	Unavail	Unavail.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
DFW 2005 DART			Not Disclosed			Not Disclosed	Unavail	Unavail.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
NJT Multi-level (Base) 2004			Tom Rutkowski 201-955-5900			Not Disclosed	165,000 miles	190,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
NJT													
NJT Comet V 2001 NJT			Tom Rutkowski	201-955-5900		Not Disclosed	125,000 miles	160,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
SEPTA M4 2000 SEPTA			Dan J Gibbone	dgibbone@septa.org	215-580-8030	Not Disclosed	42,000 miles	100,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
WMATA 3K, 4K, 5K 1983-1995 WMATA			Tim Bach	tbach@wmata.com	2029621157	Not Disclosed	165,000 miles	195,000 hrs.	Unavail.		Description not provided	Data Unavailable	Data Unavailable
<b>Wabtec: Door Systems, Door Open Pushbuttons interior/exterior, Gap Mitigation Device</b>													
NYCT R142 1999 NYCT			Bruce Alexander	718 694-4485		Not Disclosed	MDBSCF 60,000 miles MDBF 320,000 miles	Not Req'd	2 Yrs.	Improper operation, maintenance, or testing of the item as a result of contractor supplied documentation or other contractor failure to meet its contractual obligations.	<b>Data Gathering:</b> Vapor receives failure information from the Vapor field service team, the Vapor material and return process, and directly from the Carbuilder or Customer. Vapor receives the car fleet information regarding the number of cars in service and the mileage run from the Carbuilder. Vapor receives the initial relevant failures assigned by the Carbuilder. Relevant information is recorded into an electronic form which is compatible with the RAMS database. <b>Data Analysis:</b> This information is reviewed and categorized by a reliability engineer. The reliability engineer will cross check the in service failure information with the internal repair information. The failures and repairs are categorized in the FRACAS RAMS database. The Carbuilder relevant failures are reviewed and either accepted as part of the Vapor door scope or assigned a categorization of Carbuilder responsibility or of passenger responsibility. The failures are then	MDBF 2,500,000 miles	at end of warranty
NYCT R142A / R142S 1999 NYCT			Bruce Alexander	718 694-4485		Not Disclosed	MDBSCF 60,000 miles MDBF 320,000 miles	Not Req'd	2 Yrs.	n or other contractor failure to meet its contractual obligations.		MDBF 1,200,000 miles	at end of warranty
NYCT R143 2001 NYCT			Bruce Alexander	718 694-4485		Not Disclosed	MDBSCF 45,000 miles MDBF 240,000 miles	Not Req'd	2 Yrs.	Software failures which manifest themselves in an equipment failure or in an indication failure, resulting in loss of function of an item in accordance with the		MDBF 675,000 miles	at end of warranty
NYCT R160 2003 NYCT			Bruce Alexander	718 694-4485		Not Disclosed	MDBSCF 45,000 miles MDBF 100,000 miles	Not Req'd	2 Yrs.			not at end of warranty	MDBSCF 180,328 miles



Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
LIRR M-7 2000 NYCT			John Gariti 718 558-4877			Not Disclosed	MDBCF 140,000 miles MDBSF 2,000,000 miles MDBF 4,000,000 miles	Not Req'd	2 Yrs.	specification. Pattern failures that have been so identified by the Failure Review Board (FRB).	reviewed with the Carbuilder's reliability engineer for data consolidation and confirmation. A review of the data over time will typically yield a door system reliability performance curve and a Vapor responsibility reliability performance curve. These performance curves are compared to the Contractual reliability requirement. If the reliability is below the Contractual reliability requirement, trends are analyzed and areas of improvement are identified to the Vapor project team for improvement resolution and communication to the customer.	MDBCF 180,400 miles	at end of warranty
PATH 2008 PATH			Mark Barberash 973 350-2854			Not Disclosed	MDBSC F 60,000 miles	Not Req'd	2 Yrs.			not at end of warranty	MDBSCF 131,163 miles
CTA 5000 2010 CTA			Robert Kielba 847 982-5164			Not Disclosed	Unavail	Unavail.	2 Yrs.			not at end of warranty	MMBCF 60,879 miles
MNR M-8 MNR			Amir Rahimi 212 499-4408			Not Disclosed	MDBCF 140,000 miles MDBSF 2,000,000 miles MDBF 4,000,000 miles	Not Req'd	2 Yrs.			not at end of warranty	MDBCF 158,640 miles MDBSF 2,419,267 miles MDBF 9,677,067 miles
HEATING, VENTILATION & AIR CONDITIONING													
Faiveley: HVAC													
DMRC-RS2 2007-2008 Delhi Metro			Karoly Surgay karoly.csurgay@ch.transport.bombardier.com			Not Disclosed	1,250,000 miles	26,785,714 hrs.	3 Yrs.	Train withdrawal Departure failure Service delay >3mins	Data solicitation from customer, field service engineers etc entered through Failure database	>6,429,936 miles	>6,429,936 miles
MELCO: HVAC													
MNR M-8 2008-2014 Metro North Railroad			Dan Alcantara (914) 376-4700			Not Disclosed	MDBCF 200,000 miles	Unavail.	2017	Component Failure	Official Information from Car-builder	not at end of warranty	MDBCF 358,410 miles

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
NJT Multilevel 2008-2009 New Jersey Transit			Kari Rasco (516) 566-5218			Not Disclosed	MBDF 320,000 miles	Not Req'd	2015		Official Information from Car-builder	MBDF 415,901 miles	MBDF 415,901 miles
AMT Multilevel 2009-2011 AMT			Jonathan Gobeil (514) 402-8167			Not Disclosed	MBDF 320,000 miles	Unavail.	2015		Description not provided	not at end of warranty	Unavail.
NYCT R188 2011-2013 NYCT			Yasutoshi Hinada (914) 376-4700, x.4368			Not Disclosed	MDBCF 100,000 miles	Unavail.	2015		Description not provided	not at end of warranty	Data Unavailable
NJT Multilevel 2 2012-2014 NJT			Kari Rasco (516) 566-5218			Not Disclosed	MBDF 320,000 miles	Unavail.	2015		Description not provided	not at end of warranty	Data Unavailable
Maryland Multilevel 2013-2014 Maryland MTA			Kari Rasco (516) 566-5218			Not Disclosed	MBDF 250,000 miles	Unavail.	2016		Description not provided	not at end of warranty	Data Unavailable
<b>LIGHTING</b>													
<b>LECIP: Lighting</b>													
Caltrans 2011 Caltrans			Gerald Fuller Gerald_fuller@dot.ca.gov (916)335-2237			MDBCF > 1,000,000 miles	890,000 miles	500,000 hrs.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
SEPTA 2011 SEPTA			Gerald Moore gmoore@septa.org (215)580-8355			MDBCF > 1,000,000 miles	500,000 miles	500,000 hrs.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
Amtrak 2011 Amtrak			George Moore moorege@Amtrak.com (215)349-4944			MDBCF > 1,000,000 miles	890,000 miles	500,000 hrs.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
JR East 2010 JR East			Masayasu Suemune masayasu.suemune@mb.lecip.co.jp 03-3971-0106			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
JR East 2012 JR East			Masayasu Suemune masayasu.suemune@mb.lecip.co.jp 03-3971-0106			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
Hankyu Railways 2010 Hankyu Railways			Hidekatsu Koizumi Hidekatsu.koizumi@mb.lecip.co.jp 06-6881-4685			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	2 Recalls	Data Unavailable

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
Mitsubishi Heavy Industries 2012 Mitsubishi Heavy Industries			Hidekatsu Koizumi Hidekatsu.koizumi@mb.lecip.co.jp 06-6881-4685			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
J-TREC 2012 J-TREC			Masayasu Suemune masayasu.suemune@mb.lecip.co.jp 03-3971-0106			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	1 Recall	Data Unavailable
JR Kyushu 2011 JR Kyushu			Hidekatsu Koizumi Hidekatsu.koizumi@mb.lecip.co.jp 06-6881-4685			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	1 Recall	Data Unavailable
JR Central 2012 JR Central			Misato Handa misato.handa@mb.lecip.co.jp 058-323-6183			MDBCF > 1,000,000 miles	Unavail.	Unavail.	2 Yrs.	Light turn off	Description not provided	No Recall	Data Unavailable
TDG: Lighting													
Metrolinx 2014 Go Transit			David Allen dallen@tdgdesign.com 416-274-6716			None – system not in service yet.	MDBCF ≥ 2,000,000 miles	MTBF ≥ 58,824 hrs.	2 Yrs.	Single component failure. Failure analysis within 30 days. Reliability demonstration program	TDG records data when a field failure is reported to TDG. Use failure data of product with similar circuitry to determine MTBF. Apply MTBF value to specific system with specific instances of the core circuitry. No failures on similar circuitry to date.	No data, warranty period not reached.	Data Unavailable
King Abdullah Financial District Monorail Project 2012 King Abdullah Financial District Monorail			David Allen dallen@tdgdesign.com 416-274-6716			No failures. MTBF calculated at 7,884,000 hours to date.	MDBF ≥ 2,500,000 miles	MTBF ≥ 200,000 hrs.	2 Yrs.	Failure which reduces light intensity below minimum. MTTR ≤ 0.5 hours Failure analysis as required.		No failures to date.	No failures to date.
ART MK III Platform 2011 NJT			David Allen dallen@tdgdesign.com 416-274-6716			No failures. MTBF calculated at 3,431,000 hours to date.	MDBF ≥ 4,500,000 miles	MTBF ≥ 200,000 hrs.	2 Yrs.			No failures to date.	No failures to date.
POWER DISTRIBUTION & AUXILIARY ELECTRICAL EQUIPMENT													
Saft America Inc.: Battery													

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
NYCT R142 1998 NYCT			Not Disclosed			Not Disclosed	5,000,000 miles	Not Req'd	2.5 Yrs	No failures	Field Data	Data Unavailable	Data Unavailable
LIRR/MNCR M7 2001 NYCT			Not Disclosed			Not Disclosed	100,000 miles	Not Req'd	2.5 Yrs.			Data Unavailable	Data Unavailable
Las Vegas 2002 RTCSNV			Not Disclosed			Not Disclosed	Not Req'd	40,000 hrs.	2.5 Yrs.			Data Unavailable	Data Unavailable
WMATA 6K 2004 WMATA			Not Disclosed			Not Disclosed	3 failure per million miles (FPMM)	Unavail.	3 Yrs.			Data Unavailable	Data Unavailable
MNR M8 2008 MNR			Not Disclosed			Not Disclosed	135,000 miles	Unavail.	6 Yrs.			Data Unavailable	Data Unavailable
WMATA 7K 2011 WMATA			Not Disclosed			Not Disclosed	500,000 miles	Unavail.	4 Yrs.			Data Unavailable	Data Unavailable
Amtrak Viewliner II 2011 Amtrak			Not Disclosed			Not Disclosed	Not Req'd	200,000 hrs.	6 Yrs.			Data Unavailable	Data Unavailable
SMART 2012 SMART			Not Disclosed			Not Disclosed	Not Req'd	6,000 hrs.	6.5 Yrs.			Data Unavailable	Data Unavailable
Houston Metro 2013 METRO			Not Disclosed			Not Disclosed	Not Req'd	250,000 hrs.	3 Yrs.			Data Unavailable	Data Unavailable
Toronto Metrolinx DMU 2013 TTC			Not Disclosed			Not Disclosed	Not Req'd	6,000 hrs.	6.5 Yrs.			Data Unavailable	Data Unavailable
MELCO: Auxiliary Power Supply/Low Voltage DC Power													
SEPTA 2006-2015 ROTEM			Daniel Gibbone (SEPTA) 215- 580-8030			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
R179 2012-2015			Marie-Julie Blain 450-441-8157			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable



Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
Bombardier													
BART 2012-2016 Bombardier			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Toyo Denki: Auxiliary Power Supply													
E231 Series 2000-2005 JR East			Not Disclosed			150,000 miles	9,640,000 miles	513,000 hrs.	2 Yrs.	Inverter, input circuit and reactor, and control unit failure	Operation: 350 day/year, 14 hour/day Total Operation Time: 8,735,000 hours Number of Failure: 17 Avg. Speed: 18.8 mph	Data Unavailable	Data Unavailable
PROPULSION & DYNAMIC BRAKING													
MELCO: Propulsion													
M-7 2002 LIRR/MNR			Dan Alcantara (914) 376-4700			Not Disclosed	MDBCF 200,000 miles	Not Req'd	2014	Component Failure	Provided by carbuilder (carbuilder monitors failure during revenue service)	MDBCF 345,000 miles	Data Unavailable
M-8 2009 MNR/CDOT			Dan Alcantara (914) 376-4700			Not Disclosed	MDBCF 200,000 miles MDBSF 500,000 miles	Not Req'd	2019			Not in Warranty yet	MDBCF 358,410 miles MDBSF 509,319 miles
Toyo Denki: Propulsion													
Chengdu Metro Line 1 2007 Chengdu Metro			CHEN YING 0086-13558667468 mailto:chenying_zy@sina.com			100,000 miles	841,187 miles	36,588 hrs.	3 Yrs.	A delay equivalent to or exceeding 2 minutes; Non-availability of the train to start revenue service after successful completion of pre-departure checkout.	Sample of raw defect history data	906,573 miles	1,057,668 miles

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
Dallas LRV 2003 Dallas DART			Allen Bud Beene 214-749-280 ABeene@dart.org			100,000 miles	280,371 miles	14,019 hrs.	2 Yrs. & 1 month	An abnormal component condition that necessitates removing or withholding the car from service for corrective action.		280,371 miles	Data Unavailable
<b>TRUCKS</b>													
<b>Bradken: Trucks</b>													
Gallary Car Truck 1961 Metra			Bill Koran wkoran@metrarr.com (312) 322-6574			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 58,000 miles/per/yr average x 52 yrs x 277 = 835,432,000 Miles	Data Unavailable	52 Yrs.
Gallary Car Truck 1992 Metra			Bill Koran wkoran@metrarr.com (312) 322-6574			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 58,000 miles/per/yr average x 22 yrs x 13 = 16,588,000 Miles	Data Unavailable	22 Yrs.
Gallary Car Truck 2002 Metra			Bill Koran wkoran@metrarr.com (312) 322-6574			MDBF Cab Car 20,000 miles MDBF Trailer Car 25,000 miles	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 58,000 miles/per/yr average x 12 yrs x 300 = 208,800,000 Miles	Data Unavailable	12 Yrs.
Gallary Car Truck 2005-2013 Virginia Rail Express			Bob (Takeo) Suzuki takeo.suzuki@nipponsharyo.com (815)562-8600			MDBF Cab Car 20,000 miles MDBF Trailer Car 25,000 miles	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 58,000 miles/per/yr average x 8 yrs x 60 = 27,840,000 Miles	Data Unavailable	8 Yrs.
BART 1969 BART			Ben Holland bhollan@bart.gov (510) 476-3727			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 70,000 miles/per/yr average x 44 yrs x 250 = 770,000,000 Miles	Data Unavailable	Data Unavailable
BART 1992 BART			Ben Holland bhollan@bart.gov (510) 476-3727			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 70,000 miles/per/yr average x 21 yrs x 80 = 117,600,000 Miles	Data Unavailable	Data Unavailable
1000 Series 1973 WMATA			Jeff Thompson jathompson@wmata.com (301) 955-5038			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 69,000 miles/per/yr average x 40 yrs x 300 = 828,000,000 Miles	Data Unavailable	Data Unavailable
5000 Series 1999			Jeff Thompson jathompson@wmata.com			Allowable - 3 FPMM	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 69,000 miles/per/yr average x 14 yrs x 192 = 185,472,000 Miles	Data Unavailable	Data Unavailable

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
WMATA			(301) 955-5038										
6000 Series 2003 WMATA			Jeff Thompson jathompson@wmata.com (301) 955-5038			Allowable – 3 FPMM	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 69,000 miles/per/yr average x 10 yrs x 184 = 126,960,000 Miles	Data Unavailable	Data Unavailable
MARTA 1978 MARTA			Richard Vernick rvernick@itsmarta.com (404) 848-3279			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 50,000 miles/per/yr average x 35 yrs x 100 = 175,000,000 Miles	Data Unavailable	Data Unavailable
MARTA 1995 MARTA			Richard Vernick rvernick@itsmarta.com (404) 848-3279			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Fleet = 50,000 miles/per/yr average x 18 yrs x 5 = 4,500,000 Miles	Data Unavailable	Data Unavailable
Bi-level 1978-1991 Go Transit, Tri-Rail			Terry Pohjoisrinne terry.pohjoisrinne@ca.transp ort.bombardier.com (807) 475-2810			Not Disclosed	Unavail.	Unavail.	15 Yrs. or 1,000,000 miles	No failures	Fleet = 40,000 miles/per/yr average x 31 yrs x 549 = 680,760,000 Miles	Data Unavailable	Data Unavailable
Bi-level 1992-2004 SCRRA, Coaster, West Cost Express, ACE, Sounder, Trinity Railway Express, Caltran			Terry Pohjoisrinne terry.pohjoisrinne@ca.transp ort.bombardier.com (807) 475-2810			Not Disclosed	Unavail.	Unavail.	15 Yrs. or 1,000,000 miles	No failures	Fleet = 40,000 miles/per/yr average x 11 yrs x 541 = 238,040,000 Miles	Data Unavailable	Data Unavailable
Bi-level 2008 UTA			Terry Pohjoisrinne terry.pohjoisrinne@ca.transp ort.bombardier.com (807) 475-2810			Not Disclosed	Unavail.	Unavail.	15 Yrs. or 1,000,000 miles	No failures	Fleet = 40,000 miles/per/yr average x 6 yrs x 18 = 4,320,000 Miles	Data Unavailable	Data Unavailable
5650 Series 1997 Various			Will Burrows w.burrows@nationalrailway.c om (708) 388-6002			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Unavail.	Data Unavailable	Data Unavailable
TTC H-series 1965-1979 TTC			Bob Dougherty robert.dougherty@ttc.ca (416) 393-3196			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	H-5 Retired, will be rebuilt for Lagos, Nigeria Blue Line	Data Unavailable	Data Unavailable
TTC Workcar 2005-2010 TTC			Bob Dougherty robert.dougherty@ttc.ca (416) 393-3196			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Maintenance service vehicles, not revenue service	Data Unavailable	Data Unavailable
EMD Loco 1936 Various			George Hickey george.hickey@emdiesels.co m (708) 387-5539			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Various frames and bolster in service 50+ yrs	Data Unavailable	Data Unavailable
GE Loco 1972 Varous			Elson Batista Elson.Batista@ge.com (814) 875-4913			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Various frames and bolsters in service 40+ yrs	Data Unavailable	Data Unavailable

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			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
MPI Loco 1994 Metra			Ben Orr BOrr@Wabtec.com (208) 947-4901			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	2 axle & 3 axle truck frames and bolsters	Data Unavailable	Data Unavailable
Tri-Rail 2012 Brookville			Larry Conrad l_conrad@brookvilleequipme nt.com (814) 849-2000			Not Disclosed	Unavail.	Unavail.	30 Yrs.	No failures	Supplied frame and bolster castings, locomotives are not in service yet.	Data Unavailable	Data Unavailable
UTCRA: Wheels, Axles, Journal Bearings and Housing													
SCRRA New Car Build 2008-2013 Hyundai Rotem			Andy Hyer Andy.hyer@rotemusa.com 215-952-3637			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
SEPTA New Car Build 2009-2013 Hyundai Rotem			Andy Hyer Andy.hyer@rotemusa.com 215-952-3637			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Denver RTD New Car Build 2012-2015 Hyundai Rotem			Andy Hyer Andy.hyer@rotemusa.com 215-952-3637			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
MBTA New Car Build 2011-2014 Hyundai Rotem			Andy Hyer Andy.hyer@rotemusa.com 215-952-3637			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Commuter Rail Running Repair 1994-Present MBTA			Roland Cuniff Roland.cunniff@mbcr.net 617-222-6399			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Amtrak Locomotive 2012-2014 Siemens			Steve Rocha Steve.rocha.ext.@siemens.cco m 916-525-2887			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Amtrak Viewliner 2011-2015 CAF			Paul Cremidis Paul.cremidis@cafusa.com 607-737-3158			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Running Repair 2008-2013 MARTA			Paul Christian 404-848-3199			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Repair and Repair Caltrans Overhaul 2012-2013 Amtrak			S. Tsuchiya Tsuchiya@kawasakirailcar.co m 914-376-4700			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable



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			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
SEPTA M4 Overhaul 2012-2015 Bombardier			Charles Sorce sorcec@amtrak.com 302-757-6745			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
MARC Train Service Running Repair 1990-present MTA			Tom Martin 607-664-7374			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Gear Unit Overhaul 2005-present PATCO			Bill Sullivan william.sullivan@us.transport .bombardier.com 484-636-7600			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Brake Discs / Wheels 2012-2015 WMATA			John Shea Jjshea@drpa.org 856-772-6953			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
SCRRA Running Repair 2013-2017 Alstom			Wayne Bolander Jr, 202-641-4933			Not Disclosed	Unavail.	Unavail.	1 Yr.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
MBTA Greenline Overhaul 2013-2016 Alstom			Arturo Veloz Arturo.veloz@transport.alsto m.com 630-369-2311			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
MBTA Bi-Level Overhaul 2013-2015 Alstom			Arturo Veloz Arturo.veloz@transport.alsto m.com 630-369-2311			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
MTA LRV Overhaul 2013-2018 Alstom			Arturo Veloz Arturo.veloz@transport.alsto m.com 630-369-2311			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Running Repairs 2013-2014 NCTD			Holly Lam hlam@nctd.org 760-966-6537			Not Disclosed	Unavail.	Unavail.	1 Yr.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
<b>Wabtec: Current Collectors</b>													
R-142 1998-2005 NYCT			Mr. G. Sansone 717-694-4484			Not Disclosed	MDBF 20,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service	12- Month Running Averages, Time in Revenue 4 yrs, 0 Months	MDBF 57,279,000 miles	Data Unavailable
R-142A 1999-2005 NYCT			Mr. G. Sansone 717-694-4484			Not Disclosed	MDBF 20,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from	12- Month Running Averages, Time in Revenue 4 yrs, 0 Months	MDBF 26,959,000 miles	Data Unavailable

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			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
										Service			
R-143 2001-2005 NYCT			Mr. G. Sansone 717-694-4484			Not Disclosed	MDBF 9,000,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service	12- Month Running Averages, Time in Revenue 2 yrs, 5 Months	MDBF 9,064,000 miles	Data Unavailable
FRICITION BRAKES & PNEUMATIC SYSTEM													
Faiveley: Friction Brakes & Pneumatic System													
Metro NYCT 2013 NYCT			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
TGV (South East) 2008 SNCF			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Intercity Coaches ATLAS COPCO 2005 NS (Netherlands)			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
LRV/Tramway ALSTOM 1988 RATP			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Wabtec: Friction Brakes & Pneumatic System													
NYCT R142 1998-2005 NYCT			M. Wetherall Mike.wetherall@nyct.com 718-694-4460			80,000 miles	MDBCF 60,000 miles	Not Req'd	3 Yrs.	Causing Train Delays or Removal from Service	<b>Data Gathering:</b> Vapor receives failure information from the Vapor field service team, the Vapor material and return process, and directly from the Carbuilder or Customer. Vapor receives the car fleet information regarding the number of cars in service and the	MDBCF 113,160 miles	Data Unavailable
			Mr. G. Sansone 717-694-4484				MDBF 1,510,000 miles					MDBCF 1,123,000 miles	
NYCT R142A / R142S 1999-2005			M. Wetherall Mike.wetherall@nyct.com			80,000 miles	MDBCF 60,000	Not Req'd	3 Yrs.	Causing Train Delays or		MDBCF 94,740	Data Unavailable

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			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
NYCT			718-694-4460				miles MDBF 720,000 miles			Removal from Service	mileage run from the Carbuilder. Vapor receives the initial relevant failures assigned by the Carbuilder. Relevant information is recorded into an electronic form which is compatible with the RAMS database. <b>Data Analysis:</b> This information is reviewed and categorized by a reliability engineer. The reliability engineer will cross check the in service failure information with the internal repair information. The failures and repairs are categorized in the FRACAS RAMS database. The Carbuilder relevant failures are reviewed and either accepted as part of the Vapor door scope or assigned a categorization of Carbuilder responsibility or of passenger responsibility. The failures are then reviewed with the Carbuilder's reliability engineer for data consolidation and confirmation. A review of the data over time will typically yield a door system reliability performance curve and a Vapor responsibility reliability performance curve. These performance curves are compared to the Contractual reliability requirement. If the reliability is below the Contractual reliability requirement, trends are analyzed and areas of improvement are identified to the Vapor project team for improvement resolution and communication to the customer.	miles MDBF 1,037,000 miles	
			Mr. G. Sansone 717-694-4484										
NYCT R143 2001-2005 NYCT			M. Wetherall Mike.wetherall@nyct.com 718-694-4460			80,000 miles	MDBSCF 71,940 miles MDBF 720,000 miles		3 Yrs.	Causing Train Delays or Removal from Service		MDBSCF 103,020 miles MDBF 906,000 miles	Data Unavailable
			Mr. G. Sansone 717-694-4484										
NYCT R160 2003 NYCT			M. Wetherall Mike.wetherall@nyct.com 718-694-4460			Not Disclosed	MDBSCF 60,000 miles	Not Req'd	2 Yrs.	Not Disclosed		MDBSCF 110,852 miles MDBF 1,260,504 miles	Data Unavailable
MBTA #5 Blue Line MBTA			S. Adkins sadkins@mbta.com 617-293-4635			Not Disclosed	MDBF 60,000 miles	Not Req'd	2 Yrs.	Not Disclosed		MDBF 94,925 miles	Data Unavailable
PATH PA5 2009 PATH			D. Dreisbach dreisbach@panynj.gov 973 350-2854			Not Disclosed	MDBF 60,000 miles	Not Req'd	2 Yrs.	Not Disclosed	MDBF 497,084 miles (A-Car) MDBF 2,692,515 miles (C-Car)	Data Unavailable	
COMMUNICATIONS & PASSENGER INFORMATION SYSTEM													
ISC Applied Systems: CCTV Operator, LCD monitors, Active Route Maps, Automatic Passenger Counting System													

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
Rapid Transit Cars 2012 PATCO			Eric Garzon egarzon@iscappliedsystems.com 514-515-8645			MDBCF 130.000 miles @ 10 MPH	164,780 miles	16,478 hrs.	2 Yrs	Predicted failure rate	Use of historical field data on identical or similar equipment from other transit applications; Vendor supplied data; When available from other programs, Part Stress reliability prediction method specified in MILHDBK-217F, Notice 2;- Parts Count reliability prediction method specified in MIL-HDBK-217F, Notice 2;- For non-electronic equipment, "Non-Electronic Parts Reliability Data – 1995" (NPRD-95) maybe used;	Data Unavailable	Data Unavailable
MBTA No. 5 Blue Line 2007-2014 MBTA			Karen Love klove@MBTA.com 617-222-3490			MDBCF 50.000 miles @ 10 MPH	249,000 miles	24,900 hrs.	2 Yrs.	Historical failure rate		Data Unavailable	MBDCF 249,000 miles
TOA Communication Systems: CCTV Operator, LCD monitors, Active Route Maps, Automatic Passenger Counting System													
SCRRRA 2009 Metrolink			Mr. Telis Kakaris@scrra.net 323 224 3472			3,413,334 miles	170,666 miles	16.49 Failure Per Million Hours (FPMH)	2 Yrs.	Handset has been damaged.	Reliability calculation	not at end of warranty	Data Unavailable
SFRTA 2010 South Florida RTA			Mr. Bradley A. Barkman barkmanb@sfrrta.flgov 954 788 7946			Not Disclosed	Not Req'd	16.49 FPMH	2 Yrs.	Key switch has been replaced.	Reliability calculation	not at end of warranty	Data Unavailable
Bangalore Metro India 2010 Bangalore Metro			B.L Yashavanth chavan@bmrc.co.in +91 80 22969300			Not Disclosed	Not Req'd	55,000 hrs.	3 Yrs.	LED back light will be attenuated.	Reliability calculation	Data Unavailable	Data Unavailable
Delhi Metro RS3 2009 Delhi Metro			S. S Joshi edrs@dmrc.org +91 11 29561394			Not Disclosed	Not Req'd	78,000 hrs.	3 Yrs.	Brightness of LED element will be attenuated.	Reliability calculation	Data Unavailable	Data Unavailable
AM3 2010 Attiko Metro S. A			Zafiris Dimitriadis zdimitriadis@ametro@ametro.gr +30 210679 2448			Not Disclosed	Unavail.	Unavail.	Unavail.	Brightness of LED element will be attenuated.	Reliability calculation	Data Unavailable	Data Unavailable
SCRRRA 2009 Metrolink/ Southern California Regional Rail Authority			Mr. Telis Kakaris@scrra.net 323 224 3472			Not Disclosed	1,137,778 miles	263,040 hrs.	2 Yrs.	Input is damaged.	Data collection	Data Unavailable	Data Unavailable



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			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
INTERIOR & EXTERIOR APPOINTMENTS													
Freedman Seating: Passenger Seats													
Rocky Mountaineer 2012-2014 Rocky Mountaineer			Rocky Mountaineer (604) 606-7200			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
United Streetcar 2013 WMATA			WMATA (202) 962-1234			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Siemens 2012-2015 Amtrak			Amtrak (888) 920-6378			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
United Streetcar 2012 Sun Tran			Sun Tran (520) 623-4301			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Talgo 2011-2012 ODOT			Mathew Garrett (888) 275-6368			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
United Streetcar 2011-2012 TriMet			TriMet (503) 962-2428			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Talgo 2011 WisDOT			WisDOT (608) 264-7898			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
SEPTA 2008-2009 SEPTA			Jim Richeal (215) 580-8314			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Bombardier 2007-2009 GRCTA			GCRTA (216) 781-4546			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
KPS/NipponSharyo 2003/2005 METRA			Metra (312) 322-2800			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
PWI/Alstom 2003-2005 WMATA			WMATA (202) 962-1234			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
CAF 2003 STA			STA (800) 836-4115			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Siemens			TriMet			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data	Data

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2002-2003 TriMet			(503) 962-2428									Unavailable	Unavailable
CAF 2002-2003 Port Authority			Anthony Trona (412) 566-5138			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Amsterdam, The Netherlands 2012-2014 GVB			0900-8011			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Bucarest, Romania 2013 Caile Ferate Romane			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Lima, Peru 2012-2013 Peru Rail			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Panama, Panama 2012-2013 Panama Canal Railway			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Mexico City, Mexico 2010-2011 Mexico Metro			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Istanbul, Turkey 2010 Turkish State Railways			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Caracas, Venezuela 2010 Metro de Caracs			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Argel, Romania 2007 Romania			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Mallorca, Spain 2006 Mallorca			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Santo Domingo, Spain 2011-2012 Renfe			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Madrid, Spain 2005-2007, 2006, 2010-2011 Renfe			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Barcelona, Spain			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data	Data

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2004-2005, 2006-2010, 2008, 2010 Renfe												Unavailable	Unavailable
Rome, Italy 2008 Trenitalia			Not Disclosed			Not Disclosed	Unavail.	Unavail.	Unavail.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Kustom Seating: Passenger Seats													
DART 2008-2010 Dallas DART			Jerry Earwood 214-928-6140			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
WMATA Ongoing WMATA			Joe Reynolds jreynolds@wmata.com 202-962-1566			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Houston III Ongoing METRO			Scott Grogan 713-982-8215			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Twin Cities 2011-2014 MVTa			Rick Carey 651-602-1934			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Portland Ongoing Tri Met			Jason Grohs grohsj@trimet.org 503-962-2245			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Charlotte Ongoing CATS			Gary Lee grlee@ci.charlotte 704-432-5010			Not Disclosed	Unavail.	Unavail.	2 Yrs.	Not Disclosed	Description not provided	Data Unavailable	Data Unavailable
Baultar: Composite Flooring													
GP-38 Locomotives 2006- actual CSX Transportation			John Rimer john_rimer@csx.com 518-858-7174 (cell)			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	More than 300 locomotive floors done and project on going	Data Unavailable	Data Unavailable
F40- PH Locomotives 2002-2005 METRA			William J. Koran wkoran@metrarr.com 312-322-6574			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	Project for 104 Locomotive floors.	Data Unavailable	Data Unavailable
HSR 1st Class Coaches 2008-2010 AMTRAK			J. Blair Slaughter slaughb@amtrak.com 302-463-6191 (Cell)			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	Project for 21 cars in refurbishment to change the damage ply metal with Composite floor panels.	Data Unavailable	Data Unavailable
SD-100 Articulated Cars 2010-actual Denver RTD			Phil Eberl phillip.eberl@rtd-denver.com 604-834-6156 (Cell)			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	Project for 49 cars in refurbishment to change the damage flooring with Composite floor panels.	Data Unavailable	Data Unavailable
Train Transilien- Locomotive Cab			Erwan Le Pichouron erwan.le_pichouron@fr.trans			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	No Failure reported Project for 172 new commuter trains. Baultar	Data Unavailable	Data Unavailable

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
2009 – 2014 SNCF			port.bombardier.com 011-39.33.6.1073.1640								provided the Composite flooring for each of the 344 Cab areas. Option for more cars coming in 2015.		
Subway Cars MR 63 and MR 79 1985 – 1992 Montreal STM			Christophe Lhomel christophe.lhomel@stm.info 514 280-6135			Not Disclosed	Unavail.	Unavail.	2 Yrs.	No Failure	Baultar have not supplied any spare panels since the installation was completed and the cars have been put in revenue service by STM. No failure over 759 cars.	Data Unavailable	Data Unavailable
New Subway cars MPM-10 2012 – 2017 Montreal STM			Christophe Lhomel christophe.lhomel@stm.info 514 280-6135			Not Disclosed	Unavail.	Unavail.	5 Yrs.	Not Disclosed	This project is for 468 new cars but they are not yet in revenue service.	Data Unavailable	Data Unavailable
New Subway Cars – TTC Rocket 2008 – 2014 TTC			K. T. Kwok kam.kwok@ttc.ca (416) 393-3608			Not Disclosed	Unavail.	Unavail.	5 Yrs.	No Failure	Baultar have not supplied any spare panels and no failure was reported since the cars have been put in revenue service by TTC. Project for 234 cars base with 186 cars in option (not completed yet) and upcoming option of 60 cars.	Data Unavailable	Data Unavailable
New Monorail Cars 2013-2015 SPET			Mario Fukumori mfukumori@metrosp.com.br 55 11 3371-7327			Not Disclosed	Unavail.	Unavail.	5 Yrs.	Not Disclosed	This project is for 378 new monorail cars but they are not yet in revenue service.	Data Unavailable	Data Unavailable
AUTOMATIC TRAIN PROTECTION & AUTOMATIC SPEED REGULATION													
Alstom: Automatic Train Protection/Automatic Station Identification													
Taipei TuCheng 2011 DORTS			Zhong-Xien WU thwu@trts.dorts.gov.tw 866-02-2358-2035			Not Disclosed	Not Req'd	MTBF 5,000 hrs.	1 Yr.	Not Disclosed	DORTS provided raw data	Reliability data only available for Reliability Test Period.	MTBF 5,614 hrs.
Taipei OBLEX Phase 1 Completion date 2006 DORTS			Zhong-Xien WU thwu@trts.dorts.gov.tw 866-02-2358-2035			Not Disclosed	Not Req'd	ATP MTBF 10,877 hrs. ATO MTBF 9,254 hrs.	2 Yrs.	The relevant failure of a component refers to an independent failure that causes a component to lose its function: caused by an operation			ATP 26,875 hrs. ATO 15,907 hrs.
Taipei OBLEX Phase 2 Completion date 2008 DORTS			Zhong-Xien WU thwu@trts.dorts.gov.tw 866-02-2358-2035			Not Disclosed	Not Req'd	ATO 5,000 hrs.	2 Yrs.				ATO 8,487 hrs.



Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
										conducted within the allowable scope of the specified design and environment; or by improper operation conducted according to submitted contractor documents.			
Silverliner 2008 SEPTA			K.S.Lee kwangsook@hyundai-rotam.co.kr 267-315-3696			Not Disclosed	MDBF 100,000 miles	Not Req'd	2 Yrs.	A chargeable failure is any equipment related occurrence rendering the car unfit for service; or as any maintenance action requiring repair or replacement of any subsystem or whole-vehicle component which is not an approved consumable item. Spec Sect 1.29	SEPTA provided assessment		MDBF 117,870 miles
WMATA 5K 1999 WMATA			Ken Mortford KMortford@wmata.com 202 962 1451			Not Disclosed	8 Failures Per	Not Req'd	Unavail.	Not Disclosed	WMATA provided assessment		4.6 FPMM

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
							Million Miles (FPMM)						
WMATA 2K/3K 2001 WMATA			Ken Mortford KMortford@wmata.com 202 962 1451			Not Disclosed	8 FPMM	Not Req'd	Unavail.	Not Disclosed			4.1 FPMM
WMATA 6K 2001 WMATA			Ken Mortford KMortford@wmata.com 202 962 1451			Not Disclosed	6 FPMM	Not Req'd	Unavail.	Not Disclosed			5.8 FPMM
Ansaldo STS: Automatic Speed Regulation													
MPM-10 2011-2018 Montreal STM			Etienne Malouin 3-57tienne.malouin@dessauc om 514-281-5020			Not Disclosed	2,839,890 miles	15,900 hrs.	2 Yrs.	No failures	Data Collection Process: FRCAP Method of Reliability Calculation: MIL-217	Data Unavailable	Data Unavailable
WMATA 7000 Series 2010-2017 WMATA			David Kubicek dkubicek@wmata.com 202-962-2585			Not Disclosed	344,272 miles	22,952 hrs.	2 Yrs.	No failures		Data Unavailable	Data Unavailable
MR-73 2005-2016 Montreal STM			Etienne Malouin 3-57tienne.malouin@dessauc om 514-281-5020			Not Disclosed	2228,579 miles	12,456 hrs.	1 Yr.	No failures		Data Unavailable	Data Unavailable
VEHICLE MONITORING SYSTEM													
MELCO: Vehicle Monitoring System													
M-8 2009 MNR/CDOT			Dan Alcantara (914) 376-4700			Not Disclosed	MDBCF 200,000 miles MDBSF 500,000 miles	Unavail.	2019	Component Failure	Provided by carbuilder (carbuilder monitors failure during revenue service) 190 Married pair(380 Cars) 25 Single car(25 Cars) Total 405 Cars Project is still ongoing.	Not end of warranty	MDBCF 1,209,633 miles MDBSF 9,677,067 miles
Toyo Denki: Vehicle Monitoring System													
TMS for Beijing Subway Line 10 2006 Beijing Mass Transit Railway Operation Corporation Limited			Li Li 0086-13801211811 mailto:cheliangbu@163.com			400,000 Miles	776,827 miles	35,733 hrs.	3 Yrs.	Failure which disables the train from departing on time	Sample of raw defect data	776,827 miles	Unavail.

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
SYSTEM ASSURANCE													
Cory: Training Simulator													
NSB 2002 Norwegian State Railways			Halvor Persen GUNDERSEN halvorpersen.gundersen@nsb.no +47 32 27 55 33			Not Disclosed	Not Req'd	Contractual requirement for Reliability is expressed in % of availability Contractual obligation is availability ≥ 98%	2 Yrs.	Unavailability of a vital subsystem	Each subsystem of the simulator is designed to be compatible with a nominal usage time of 16 hours per day, 5 days per week except banking holidays. In order to be usable for the training of drivers, the following vital subsystems of the Simulator shall be fully functional: A: 1 Replica Simulator with its Instructor Station, excluding motion system (RS) B: 5 Desk Simulators with 1 Training Administration Station (DS / TAS) C: Data Administration Station (DAS) The availability Ai of each of the 3 vital subsystem shall be calculated according to the following formula: <div>NominalUseTime – Downtime</div> <div>NominalUseTime</div> <div>* 100%</div> The overall subsystem availability at the end of the considered period (TOP or Warranty) will be the average of the monthly availability measured for each subsystem. The simulator shall be considered compliant with NSB's availability requirements, if the end of the considered period (TOP or Warranty) the following condition is fulfilled:A ≥ 98%	99.71%	99.59%
SNCF 1991-2012 French National Railways			Philippe DELERUE philippe.delerue@sncf.fr +33 (0)1 53 25 98 61			Not Disclosed	Not Req'd	95%	Various	A blocking event which prevents the use of a simulator.	Reliability is monitored for 158 simulators on a monthly basis with a nominal use time of 30,000 hours per month. The system downtime for a blocking failure is deducted from the nominal monthly use time. The availability is the ratio of the	Unavail.	99.43%

Project Name	Contract Year	Transit Authority	Customer Information			Reliability Data (See Tech Spec. T2.03.03)	Contractual Reliability Requirement			Definition of Failure	Description of Data (e.g. data collection process, method of reliability calculation, sample of raw defect history data, etc.)	Actual Reliability Achieved at the End of the Warranty Period	Actual Reliability Currently being Realized, if available
			Contact Name	Email	Phone Number		Mean Distance Between Failure (MDBF)	Mean Time Between Failure (MTBF)	Warranty Period(s)				
											measured use time over the nominal use time and is expressed in percent.		
<b>Simutech International: Training Simulator</b>													
Dalian Metro Full-mission Simulator 2013 China DaLian MTRC			Dalian Metro Full-mission Simulator Nayitian10681@163.com 0086-18901231006			Not Disclosed	Not Req'd	> 4,000 hrs.	2 Yrs.	No failure	More than the actual value of the project implementation.	Warranty Period not finish	> 4,000 hrs.
One set Train Simulator 2012 China National Machinery Import and Export Corporation			Train Simulator zhuyiys@yahoo.com.cn 0086-13501129460			Not Disclosed	Not Req'd	> 4,000 hrs.	1 Yr.	No failure		No problems occur during the warranty period.	> 4,000 hrs.
Dalian Fast Train Simulator 2011 Dalian Modern Rail Transit Co.			Fast Train Simulator jinyuming2002@163.com; 0086-0411-86533820			Not Disclosed	Not Req'd	> 4,000 hrs.	1 Yr.	Computer equipment motherboard damage.		There is a second computer's motherboard is damaged, replace it.	> 3,500 hrs.
Metro Simulator 2011 China Beijing Vocational College of Transportation			Metro Simulator 76228575@qq.com 0086-13611367702			Not Disclosed	Not Req'd	> 3,500 hrs.	1 Yr.	No failure		No problems occur during the warranty period.	> 3,500 hrs.




### 3.4 ALL PASSENGER TRANSPORTATION PAST PERFORMANCE


Below is the RFP requirement for all passenger transportation past performances:


Tab I.3 (c) Offeror and Major Subcontractors Past Performance

*List (in a matrix format) project information for all passenger transportation rail car (including light rail, streetcar/tram, commuter/suburban, metro/heavy rail, intercity and high speed) contracts issued to the Offeror for the past ten (10) years. Past ten (10) years shall include all contracts that were active at any time during the past ten (10) years, inclusive of warranty stage as well as any executed contracts during this period. For each entry the Offeror shall include:*

- *The contractual delivery schedule (including pilot car, first production car, last production car, manuals, spare parts, special tools)*
- *The actual delivery schedule (including for pilot car, first production car, last production car, manuals, spare parts, special tools)*
- *Reasons for delays (technical, commercial, force majeure, other)*
- *Penalties and/or liquidated damages*
- *A current customer contact information for verification*


Project Name: Beijing Metro 14#				Contract Year	2012 – 2014
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type Stainless Steel Metro vehicle	38 trainsets	Tc : 37.2t Mp : 37.8t M : 37.66t	Tc :    AW1 : 56 passengers AW2 : 310 passengers AW3 : 430 passengers Mp, M:   AW1 : 56 passengers AW2 : 310 passengers AW3 : 430 passengers	Tc:       80.05 x 9.84 ft (24,400 x 3,000 mm) Mp, M:   74.80 x 9.84 ft (22,800 x 3,000 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2012/8	2012/11	2014/7	2012/12	2013/3	2013/3
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2012/8	2012/11	Delivery not completed	2012/12	2013/3	2013/3
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Beijing Metro 6#				Contract Year	2011 – 2014
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
B type stainless steel vehicle	64 trainsets	Tc: 33t Mp: 33.7t M: 33.1t	Tc:    AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers Mp, M:  AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc:       65.49 x 9.19 ft (19,960 x 2,800 mm) Mp, M:   62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
8/2011	1/2012	7/2014	10/2013	8/2013	8/2013
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
8/2011	1/2012	Delivery not completed	10/2013	8/2013	8/2013
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					

Project Name: Shenyang Metro Line 1				Contract Year	2006– 2010
Transit Authority/Customer		Contact	Email	Phone Number	
Shenyang Metro Group Co., Ltd.		Yang Pengfei	YanPengfeiCRC@163.com	13840519115	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
B type Stainless Steel vehicle	23 trainsets	Tc: 32.1t T: 28t Mp: 34.6 t M: 34.3 t	Tc: AW1 : 36 passengers AW2 : 230 passengers AW3 : 290 passengers Mp, M, T: AW1 : 42 passengers AW2 : 245 passengers AW3 : 310 passengers	Tc: 63.98 x 9.19 ft (19,500 x 2,800 mm) Mp, M, T: 62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
11/2007.	3/2009	3/2010	8/2008	3/2009	11/2008
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
11/2007.	3/2009	3/2010	8/2008	3/2009	11/2008
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					




Project Name: Chongqing Rail Transit Line 6				Contract Year	2010 – 2011
Transit Authority/Customer		Contact	Email	Phone Number	
Chongqing Rail Transit Group Co., Ltd.		Wu Jing	WUJING@163.com.cn	13983115816	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
B type stainless steel vehicle	21 trainsets	T: 34.3t Mp: 33.8t M: 33.2t	Tc:    AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers Mp, M:  AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm) Mp, M:   62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
8/2010	10/2010	9/2011	10/2010	10/2010	7/2010
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
8/2010	10/2010	9/2011	10/2010	10/2010	7/2010
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Shenzhen Metro Line 3, New Procurement				Contract Year	2009- 2011	
Transit Authority/Customer		Contact	Email	Phone Number		
Shenzhen Metro Line 3 Investment Co., Ltd.		Li Guanpeng	Liguanpeng123@163.com.cn	15002052776		
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)		
B type Stainless Steel vehicle	19 trainsets	Tc: 33t M: 33.1t	Tc:    AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers M :     AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm)  M:       62.34 x 9.19 ft (19,000 x 2,800 mm)		
Contractual Delivery Schedule						
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools	
5/2010	9/2010	6/2011	12/2011	9/2010	9/2010	
Actual Delivery Schedule						
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools	
5/2010	9/2010	6/2011	12/2011	9/2010	9/2010	
Reason for Delays (e.g. technical, commercial, force majeure, etc.)						
N/A						
Penalties/Liquidated Damages						
N/A						

Project Name: Beijing Metro Line 5 New Procurement				Contract Year	2011 – 2013
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
A type Stainless Steel vehicle	22 trainsets	Tc: 31.2t M: 33.6t T: 26.8t	Tc:   AW1 36 passengers AW2 226 passengers AW3 290 passengers T, M : AW1 42 passengers AW2 254 passengers AW3 325 passengers	Tc:       65.49 x 9.19 ft (19,960 x 2,800 mm) T, M:     62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
6/2011	10/2011	8/2012	8/2011	7/2012	6/2011
Actual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
6/2011	10/2011	8/2012	8/2011	7/2012	6/2011
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Beijing Metro Line 9				Contract Year	2009 – 2012
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
B type Stainless Steel vehicle	24 trainsets	Tc: 33.071t M: 34.047t T: 27.065t	Tc:    AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers T, M :   AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm) M:       62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
3/2011	5/2011	7/2012	5/2011	11/2011	5/2011
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
3/2011	5/2011	7/2012	5/2011	11/2011	5/2011
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					




Project Name: Beijing Metro Line 10 Phase II				Contract Year	2009 – 2012
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
B type stainless steel vehicle	43 trainsets	Tc: 32.878t M:33.926t T:34.177t	Tc:    AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers TM :    AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm) T, M:     62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2011	5/2011	11/2012	5/2011	1/2011	6/2010
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2011	5/2011	11/2012	5/2011	1/2011	6/2010
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Beijing Metro 15#				Contract Year	2009 – 2011
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
B type Stainless Steel vehicle	30 trainsets	M : 34.99t Tc: 33.85t	Tc:   AW1 : 36 passengers AW2 : 230 passengers AW3 : 327 passengers M :    AW1 : 46 passengers AW2 : 250 passengers AW3 : 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm) M:       62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2010	6/2010	12/2011	5/2010	8/2010	8/2010
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2010	6/2010	12/2011	5/2010	8/2010	8/2010
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Beijing Yizhuang Line				Contract Year	2009– 2011
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Construction Management Co.Ltd.		Zhang Bao	zhangbao_mrt@126.com	13856485123	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
B type Stainless Steel vehicle	23 trainsets	Tc: 32.939t M: 33.790t T: 27.091t	Tc:    AW1: 36 passengers AW2: 226 passengers AW3: 290 passengers T,M:   AW1: 42 passengers AW2: 254 passengers AW3: 325 passengers	Tc:       63.98 x 9.19 ft (19,500 x 2,800 mm) T, M:   62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2009	5/2010	11/2011	5/2010	5/2010	5/2010
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2009	5/2010	11/2011	5/2010	5/2010	5/2010
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Chongqing Rail Transit Line 1				Contract Year	2009 – 2014
Transit Authority/Customer		Contact	Email	Phone Number	
Chongqing Rail Transit Group Co., Ltd.		Wu Jing	WUJING@163.com.cn	13983115816	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions	
B type stainless steel vehicle	29 trainsets	Mp:33.97t M:33.43t Tc:34.28t	Tc: AW1 : 36 passengers AW2 : 226 passengers AW3 : 290 passengers Mp, M: AW1 : 42 passengers AW2 : 254 passengers AW3 : 325 passengers	Tc: 63.98 x 9.19 ft (19,500 x 2,800 mm) Mp, M: 62.34 x 9.19 ft (19,000 x 2,800 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2010	11/2011	2014/5	1/2011	4/2014	7/2010
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2010	11/2011	Delivery not completed	1/2011	4/2014	7/2010
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					




Project Name: Brazil Rio de Janeiro Metro 1A				Contract Year	2009 – 2013
Transit Authority/Customer		Contact	Email	Phone Number	
RIO DE JANEIRO SUBWAY CO.		Pedro Leite Sabino	Psabino@metrorio.com.br	+55-21-992353646	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type stainless steel vehicle	19 trainsets	Tc: 41t M1: 41.3t M2: 40.8t	Tc: AW1 36 passengers AW2 280 passengers AW3 350 passengers M1, M2: AW1 36 passengers AW2 310 passengers AW3 385 passengers	Tc: 69.62 x 10.14 ft (21,220 x 3,090 mm) M1, M2: 69.62 x 10.14 ft (21,220 x 3,090 mm)	
Contractual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2011	12/2011	2/2013	9/2012	2/2012	7/2011
Actual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2011	12/2011	2/2013	9/2012	2/2012	7/2011
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Saudi Arabia Metro				Contract Year	2009 – 2010
Transit Authority/Customer		Contact	Email	Phone Number	
China Railway Construction Corporation Limited		Yan Lin	lacquiyan@gmail.com	010-51886081	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type Aluminum Alloy vehicle	17 trainsets	Tc: 37.2t Mp: 37.8t M: 37.66t	Tc : AW0 : 45 passengers AW1 : 133 passengers AW2 : 244 passengers AW3 : 310passengers AW4 : 398passengers Mp, M : AW0 : 45 passengers AW1 : 138 passengers AW2 : 254 passengers AW3 : 323 passengers AW4 : 416 passengers	Tc: 80.02 x 10.14 ft (24,390 x 3,091 mm) Mp, M: 74.80 x 10.14 ft (22,800×3,091 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2009	3/2010	10/2010	4/2010	3/2010	7/2009
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
12/2009	3/2010	10/2010	4/2010	3/2010	7/2009
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Bangkok BTS Metro Project				Contract Year	2007 – 2011
Transit Authority/Customer		Contact	Email	Phone Number	
Bargkok Mass Transit Sysrem Public Company Limitedl(BTSC)		Mr.Jarubodee	www.bls.co.th	(662) 6177300	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type Stainless Steel vehicle	12 trainsets	Tc: 35.5t M1,M2: 37.6t	Tc:      AW1 : 42 passengers AW2 : 161 passengers AW3 : 320 passengers M1, M2:   AW1 : 42 passengers AW2 : 170 passengers AW3 : 341 passengers	Tc:      67.22 x 10.24 ft (20,490 x 3,120 mm) M1, M2: 67.52 x 10.24 ft (20,580 x 3,120 mm)	
Contractual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
5/2009	8/2009	11/2011	6/2009	6/2010	8/2009
Actual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
5/2009	8/2009	11/2011	6/2009	6/2010	8/2009
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Hongkong MTR South Island Project				Contract Year	2011 – 2015
Transit Authority/Customer		Contact	Email	Phone Number	
MTR Corporation		Zheng Jianwei	Zhengweijian@163.com.cn	13756132458	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type stainless steel vehicle	10 trainsets	Mc: 42.5t M2: 42t	M1: zero load M2: average load, 200passengers each M3: no application M4: full load, 312 passengers each M5: overload, 450 passengers each	Mc: 75.56 x 10.24 ft (23,030 x 3,120 mm) M2: 70.87 x 10.24 ft (21,600 x 3,120 mm)	
Contractual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2013	3/2014	8/2014	2/2014	2/2014	2/2014
Actual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2013	3/2014	Delivery not completed	2/2014	2/2014	2/2014
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					




Project Name: Hong Kong Metro West Island Line				Contract Year	2008 – 2012
Transit Authority/Customer		Contact	Email	Phone Number	
MTR Corporation		Zheng Jianwei	Zhengweijian@163.com.cn	13756132458	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type Stainless Steel vehicle	15 trainsets	Tc: 39t Mp1: 42.5t Mp2: 42.5t M1: 42.5t M2: 42t	M1: zero load M2: average load of the train, 200 passengers each M3: no application M4: full load of the train, 312 passengers each M5: overload of the train, 450 passengers each	Tc: 77.99 x 10.24 ft (23,770 x 3,120 mm) Mp: 74.08 x 10.24 ft (22,580 x 3,120 mm) M: 74.34 x 10.24 ft (22,660 x 3,120 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2010	7/2011	8/2012	3/2012	9/2011	9/2011
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
2/2010	7/2011	8/2012	3/2012	9/2011	9/2011
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: Brazil EMU Project				Contract Year	2009 – 2012
Transit Authority/Customer		Contact	Email	Phone Number	
China National Machinery Imp. & Exp. (Group) Corp.		Wei Bing	Weibin-crc@163.com.cn	010-68991796	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
A type stainless steel vehicle	30 trainsets	Mc: 49.6t T: 44.2t	Mc: AW1: 54passengers AW2: 246 passengers AW3: 310passengers T: AW1: 60passengers AW2: 270passengers AW3 : 340passengers	Mc: 76.48 x 9.77 ft (23,310 x 2,978 mm) T: 71.33 x 9.77 ft (21,740 x 2,978 mm)	
Contractual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
5/2011	7/2011	3/2012	4/2011	10/2011	4/2011
Actual Delivery Schedule					
Pilot Car	1st Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
5/2011	7/2011	3/2012	4/2011	10/2011	4/2011
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					

Project Name: Australia Double-Deck Stainless Steel EMU Project				Contract Year	2006–2014
Transit Authority/Customer		Contact	Email	Phone Number	
Dower EDI Rail Pty Ltd		John Seale	John.Seale@downergroup.com		
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
Double-deck stainless steel EMU	78 trainsets	TDC : 50t MC : 51.4t TC : 46.2t	TDC : 102/243 passengers MC : 118/279 passengers TC : 110/274 passengers	TDC : MC : TC :	65.23 x 9.96 ft (19,882 x 3,035 mm) 63.63 x 9.96 ft (19,393 x 3,035 mm) 63.92 x 9.96 ft (19,482 x 3,035 mm)
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
06/2009	10/2009	01/2014	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
06/2009	10/2009	01/2014	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					


Project Name: CRH380CL High Speed EMU Project				Contract Year	2011 – 2013
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Railway Bureau		Zhang Xuewen	zhangxuewen@itc.genertec.com.cn	(M) 15901036159	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
EMU	25 trainsets	Axle load ≤ 17t	1053 passengers / trainsets	79.31 x 10.69 ft (24,175 x 3,257 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
01/2013	07/2013	12/2013	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
01/2013	07/2013	12/2013	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					



Project Name: CRH380B Low Temperature EMU Project				Contract Year	2009-2014
Transit Authority/Customer		Contact	Email	Phone Number	
Harbin Railway Bureau, Shenyang Railway Bureau, Beijing Railway Bureau /CNTIC		Zhang Xuwen	13911599881@126.com	13911599881	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
350km/h EMU (Low Temperature)	66 trainsets	Axle load ≤17 t	551 passengers / trainsets	79.31 x 10.69 ft (24,175 x 3,257 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
1/2012	1/2012	1/2014	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
1/2012	1/2012	1/2014	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					

Project Name : CRH380B Low Temperature EMU (Simplified) Project				Contract Year	2014-2016
Transit Authority/Customer		Contact	Email	Phone Number	
Harbin Railway Bureau, Shenyang Railway Bureau, /CNTIC		Lu Yang	13911599881@126.com	13911599881	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
350km/h EMU (Low Temperature)	47 trainsets	Axle load ≤ 17 t	556 passengers / trainsets	80.38 x 10.69 ft (24,500 x 3,257 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
7/2014	7/2014	10/2014	To be handed over with the vehicles.	To be handed over with the vehicles.	To be handed over with the vehicles.
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
Not yet completed	Not yet completed	Not yet completed	Not yet completed	Not yet completed	Not yet completed
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					

Project Name : CRH380B EMU (Simplified) Project				Contract Year	2013-2016
Transit Authority/Customer		Contact	Email	Phone Number	
Shanghai Railway Bureau, Jinan Railway Bureau, Beijing Railway Bureau /CNTIC		Lu Yang	13911599881@126.com	13911599881	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
350km/h EMU (Non Low Temperature)	47 trainsets	Axle load ≤ 17 t	556 passengers / trainsets	80.38 x 10.69 ft (24,500 x 3,257 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
3/2014	3/2014	9/2014	To be handed over with the vehicles	To be handed over with the vehicles.	To be handed over with the vehicles.
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
3/2014	3/2014	Delivery not completed	Delivery not completed	Delivery not completed	Delivery not completed
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					

Project Name : CRH380BL High Speed EMU Project				Contract Year	2009-2012
Transit Authority/Customer		Contact	Email	Phone Number	
Beijing Railway Bureau /CNTIC		Zhang Xuewen	zhangxuewen@itc.genertec.com.cn	15901036159	
Vehicle Type	Vehicle Quantity	Vehicle Weight	Seating/Standing Capacity	Dimensions (L x W)	
350km/h Speed Level 16-Car Formation EMU	45 trainsets	Axle load ≤ 17t	1043 passengers / trainsets	79.31 x 10.69 ft (24,175 x 3,257 mm)	
Contractual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
11/2010	11/2010	12/2012	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Actual Delivery Schedule					
Pilot Car	1 <sup>st</sup> Production Car	Last Production Car	Manuals	Spare Parts	Specials Tools
5/2010	5/2010	12/2012	To be handed over with the vehicles	To be handed over with the vehicles	To be handed over with the vehicles
Reason for Delays (e.g. technical, commercial, force majeure, etc.)					
N/A					
Penalties/Liquidated Damages					
N/A					



### **3.5 DESCRIPTION OF HIGH SPEED PRODUCT OF CNR CHANGCHUN**

#### **3.5.1 Description of 155 mph (250 km/h) CRH5 EMUs**

CRH5 EMUs are power distributed electric multiple units with large streamlined car noses and high strength lightweight drum-shaped section aluminum alloy car bodies. Each train consists of 8 cars, incl. 5 motor and 3 trailer cars. The traction power is 5500 kW and the service speed is 155 mph (250 km/h). Two trains can be operated in a coupled manner. They are adapted to transportation of long range and high volume in an extremely cold region.

##### **3.5.1.1 Technical Features**

1. International universal standards such as UIC, EN, IEC and ISO are applied. These standards are of high grade, with satisfactory universality. The fire rating of the trains conforms to UIC 564-2 and NF F16-101 with a smoke and fire alarm system, and the vehicle end are designed to control flame propagation. The strength of aluminum alloy car bodies conforms to EN 12663. The welding technique conforms to EN 15085. The electrical system conforms to international general standards such as IEC and ISO. EMC conforms to EN 50121. The quality management system conforms to the international standard IRIS.
2. Well proven high speed trucks are used, with absolute safety and reliability and satisfactory comfort.
3. A traction system with AC transmission technique is introduced. The internationally most advanced IGBT elements with the highest performance level are used for the traction and auxiliary converters. A non-power-interruption neutral-section passing technique is introduced so that auxiliary systems such as HVAC and lighting can work uninterruptedly.
4. A computer controlled straight-way type electropneumatic brake system is used and manual service brake application and emergency brake application can be achieved. It is linked to the signaling system effectively to realize overspeed automatic stopping and safety oriented stopping function so that rapid stable stopping is possible in any case. Through electric braking, energy is returned to the electric network for energy saving purpose. Through electropneumatic brake, a large braking effort is achieved at a high speed, minimizing effectively abrasion of brake discs and brake pads.
5. A train network control system based on TCN standard is used to achieve realtime monitoring, diagnosis and control of various items of equipment in order to monitor any change in the parameters and performance of the EMU. In case of any failure, it fails to the safe side automatically until the EMU stops. Remote wireless transmission of failure data of the EMU is possible in order to support remote diagnosis by the ground expert.
6. An HVAC system with automatic temperature adjustment function is used. Accurate temperature adjustment is possible. A pressure protection device is provided so that the pressure in the saloons can be controlled automatically when the train is running through a tunnel or passing by another train.
7. The design principle of humanization is introduced. Rotating seats are provided so that passengers can adjust the direction of the seats by themselves to meet their sitting requirement.
8. Adaptability design is introduced to meet the requirement of different platform levels used for different routes such as the existing ones and the high speed passenger service lines.
9. Longer repair cycle and lower maintenance cost.



### **3.5.2 Description of 155 mph (250 km/h) comprehensive inspection trains**

The 155 mph (250 km/h) comprehensive inspection trains are power distributed electric multiple units developed based on the technical platform of CRH5 EMUs. Each train consists of 8 cars, incl. 5 motor and 3 trailer cars. The traction power is 5500 kW and the service speed is 155 mph (250 km/h). Inspection equipment are equipped with six systems, namely communication, signaling, contact line, track geometry, wheel-rail force and integrated system. It can fulfill the tasks of technical condition systematic inspection, safety monitoring and guided maintenance of a high speed passenger special line and is a dynamic intellectualized comprehensive inspection train, having been awarded successively “the first prize of railway technology by China Railway Society” and “the second prize of scientific and technological progress in Jilin Province.”

#### **3.5.2.1 Technical features**

1. Advanced instruments and meters are used for the communication inspection system, with brand new developed software, incorporating GSM-R techniques of China, meeting the demand for test on wireless communication of high speed railways.
2. The signaling inspection system inspects and records the track circuit insulation, track circuit information, compensation capacitance and responder information and analyzes the relevant data.
3. The contact line inspection system inspects the parameters in real time such as contact wire stagger, contact wire height, contact wire mutual position, contact wire abrasion, contact line geometry, pantograph-line dynamic action and analyzes the relevant data.
4. The track geometry inspection system inspects the track parameters such as track gauge, track gauge change rate, curvature change rate, lateral and vertical frame acceleration and lateral and vertical axle box acceleration and analyzes any relevant data.
5. By continuous measurement method, the wheel-rail force inspection system measures accurately the vertical, lateral and longitudinal wheel-rail forces, wheel axle force, derailment coefficient, load reduction rate and wheel-rail contact, etc and analyzes any relevant data.
6. The integrated inspection system has the functions to centrally store, display, inquire, comprehensively analyze and transmit the inspection data.
7. Through independent design, the Company has mastered the system integration technique of the high speed EMU and inspection equipment.



### **3.5.3 Description of 217 mph (350 km/h) CRH380BL EMUs**

CRH380BL EMUs are power distributed electric multiple units with large streamlined aluminum alloy car noses and high strength lightweight drum-shaped section aluminum alloy car bodies. Each train consists of 16 cars, incl. 8 motor and 8 trailer cars respectively. The total traction power is 18,400 kW. The continuous service speed is 217 mph (350 km/h) and the max test speed is 303 mph (487.1 km/h).

#### **3.5.3.1 Technical features**

1. International universal standards such as UIC, EN, IEC and ISO are applied. The standards are of high grade, with satisfactory universality. The fire safety of the trains conforms to UIC 564-2 and DIN 5510 and provided are a smoke and fire alarm system and a vehicle end design to control flame propagation. The strength of aluminum alloy car bodies conforms to EN 12663. The welding technique conforms to EN 15085. The electrical system conforms to IEC and ISO standards. The quality system conforms to the international standard IRIS.
2. Well proven high speed trucks are used, with absolute safety and reliability and satisfactory comfort. The critical instability speed is over 342 mph (550 km/h).
3. A traction system with AC transmission technique is introduced. The internationally most advanced IGBT elements of the highest performance level are used for the traction and auxiliary converters. A non-power-interruption neutral-section passing technique is introduced so that the equipment such as HVAC and lighting can work uninterruptedly.
4. A computer controlled straight-way type electropneumatic brake system is used and manual service brake application and emergency brake application can be achieved. It is linked to the signaling system effectively to realize overspeed automatic stopping and safety oriented stopping function so that rapid stable stopping is possible in any case. Through electric braking, energy is returned to the electric network for energy saving purpose. Through electropneumatic brake, a large braking effort is achieved at a high speed, minimizing effectively abrasion of brake discs and brake pads.
5. A train network control system based on TCN standard is used to achieve realtime monitoring, diagnosis and control of various items of equipment in order to monitor any change in the parameters and performance of the EMU. In case of any failure, it fails to the safe side



- automatically until the EMU stops. Remote wireless transmission of failure data of the EMU is possible in order to support remote diagnosis by the ground expert.
6. An HVAC system with automatic temperature adjustment function is used. Accurate temperature adjustment is possible. A pressure protection device is provided so that the pressure in the saloons can be controlled automatically when the train is running through a tunnel or passing by another train.
  7. The design principle of human orientation is introduced to meet various demands of different passengers. VIP business cars are provided, equipped with top grade rotating slumber seats and independent video delight units. Thus it can compare beauty with the first-class cabin of an aeroplane, meeting the demand to handle official business. The remaining first class and second class cars are equipped with rotating seats, the direction of which is adjustable for passengers to meet their sitting requirement.
  8. Longer repair cycle and lower maintenance cost.



#### **3.5.4 Description of 217 mph (350 km/h) CRH380B EMUs for extremely cold regions**

CRH380B EMUs for extremely cold regions are power distributed electric multiple units independently developed based on the platform of CRH380BL EMUs. Each train consists of 8 cars, including 4 motor and 4 trailer cars respectively. The traction power is 9200 kW and the continuous service speed is 217 mph (350 km/h). Two trains can be operated in a coupled manner. They are suitable to the extremely cold environment of Harbin-Dalian Line and are currently the EMUs with the highest service speed suitable to extremely cold regions of 40°F (-40°C).

Based on the platform of CRH380BL EMUs, key problems are tackled in respect of low temperature characteristics of materials, energy saving of vehicle systems, thermal insulation, snow and frost protection and low temperature adaptability of various systems and the technical problems for the high speed EMUs to operate in an extremely cold environment at a high speed are solved.



#### 3.5.4.1 Technical features

1. Low temperature adaptability of relevant materials such as metals, nonmetals and greases is realized through lots of experimental investigation.
2. Thermal load for heating is realized by optimizing the car body thermal insulation structure. With increased heating power, the passenger compartment temperature meets the requirement when operating in regions of extreme cold and thus, system energy saving goals are achieved.
3. A new sealing technique is introduced, solving the problem of environmental adaptability of the exterior structure of the car body for prevention of frost at a low temperature, protection from snow in winter and ventilation in summer. Several frost protection measures are taken, solving the problem of freezing blockage of the water supply and drainage systems at a low temperature so that the water system outside the vehicle works normally at a low temperature.
4. The structures of the car body and various items of functional equipment are optimized, solving the problem of condensation due to alternation of temperature so that all the systems work normally in an environment of low temperature.
5. A systematic noise reduction technique is introduced so that the noise radiated by the train to the outside world and the interior noise reaches the optimum parameters.



#### 3.5.5 Description of 217 mph (350 km/h) CRH380CL EMUs

CRH380CL EMUs are power distributed electric multiple units independently developed based on the technical platform of CRH380BL EMUs. Each train consists of 16 cars as a long formation, with 8 motor and 8 trailer cars. The total traction power is 19,200 kW and the continuous service speed is 217 mph (350 km/h).

Through optimization design of the streamlined car noses and raising of traction power based on the platform of CRH380BL EMUs, quick starting acceleration and high continuous power of the EMUs are realized. The system integration capability is fully improved through independent design of the network system.

### 3.5.5.1 Technical features

1. Streamlined aluminum alloy car noses with a higher slender proportion are introduced, further minimizing the running resistance of the train. The aerodynamic resistance of the new kind of car noses is reduced by 10% and the aerodynamic noise by 2 dB (A).
2. Through independent design, the Company has mastered the technology to integrate the new traction system and network system based on the platform of CRH380BLEMUs.
3. New techniques of insulation and cooling are introduced. For improved starting acceleration and traction capacity, the traction power is increased from 18,400 kW to 19,200 kW.
4. The train control logic, the functional specifications and the interface relationship between systems are designed independently, settling the adaptation between the large power traction system and the new network control system and solving the problem of system integration between the brand new traction system and network control system.



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## 4 QUALITY ASSURANCE PLAN

The RFP requirement for the Quality Assurance Plan to be submitted with the Proposal states:

MBTA RFP No. CAP 27-10 Requirement
Tab I.4 Quality Assurance Plan
<i>The Offeror is to provide an outline of the Quality Assurance Manual and Project Quality Plan requirements stipulated in T 19.03 of the Technical Provisions within Part B of its proposal. The outline should include details of approach, organization, sample procedures, sample documentation, and feedback mechanisms for all phases of the program (design, manufacture, final assembly, test/commissioning, warranty).</i>
<i>The Offeror shall describe their approach to subcontractor quality compliance, first article inspections and quality control/quality assurance role at the final assembly site.</i>

### 4.1 INTRODUCTION

This section provides information outlining CNR's Quality Assurance Plan to be implemented for this project. This outline has been carefully developed to ensure compliance with every requirement pertaining to quality in this RFP and its associated documents.

CNR MA, the U.S. Corporation that will sign this contract with MBTA, shares the same ownership and corporate management as CNR Changchun Railways Vehicles Co., Ltd. (CNR CRC). As such, CNR MA adopts the same Quality policies, standards and practices that have been developed and successfully employed by CNR CRC. For purposes of this proposal section (Tab 1.4), "CNR" is used to refer to the bidder even if the items referred to may actually come from CNR CRC (such as ISO 9001 certification).

### 4.2 DETAILS OF APPROACH

CNR has certified systems in accordance with recognized international standards:

- ISO 9001 quality management system
- ISO 10012 metrology system
- ISO 14001 environmental management system
- OHSMS occupational health and safety management system
- IRIS international railway industry management system
- EN 15085 certification of welding shops for rail vehicle construction

In addition, CNR has implemented leading quality management methods using, among others:

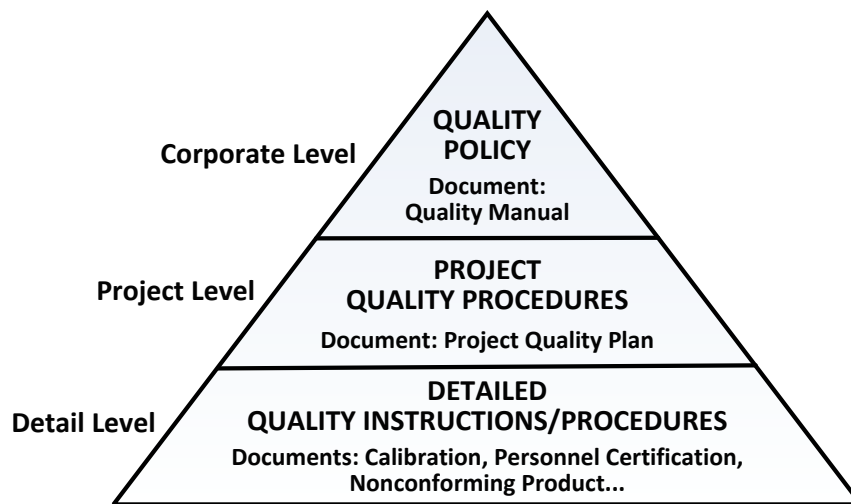
- SAP enterprise performance management
- Lean management
- P3e project management
- Gate/milestone/point PMP processes

Control of quality is an integral part of CNR's certified Quality management structure and operation to be applied to this program. Its application and documentation can be categorized in three levels.



- Corporate level quality policies of the company are documented in the Quality Manual. These practices are applied to all projects undertaken by the company.
- Project-specific procedures are written consistent with the unique requirements of each project and documented in the Project Quality Plan which contains the detailed procedures to be applied by the project team for that project.
  - The Project Quality Plan and its associated Inspection and Test Plan(s) represent the two main documents for quality for any particular project.
- Detailed instructions/procedures and forms are documented to carry out quality control (QC) and quality assurance (QA) tasks. These include a combination of corporate and project-specific documents providing instructions for control of calibration, certification of staff and equipment, and other areas.

A diagram illustrating the layers of CNR's Quality program and their controlling documentation is shown below.



**CNR Quality Program Levels and Controlling Documents**

Details of our approach to quality are described in the next sections organized following the RFP.

### 4.3 ORGANIZATION

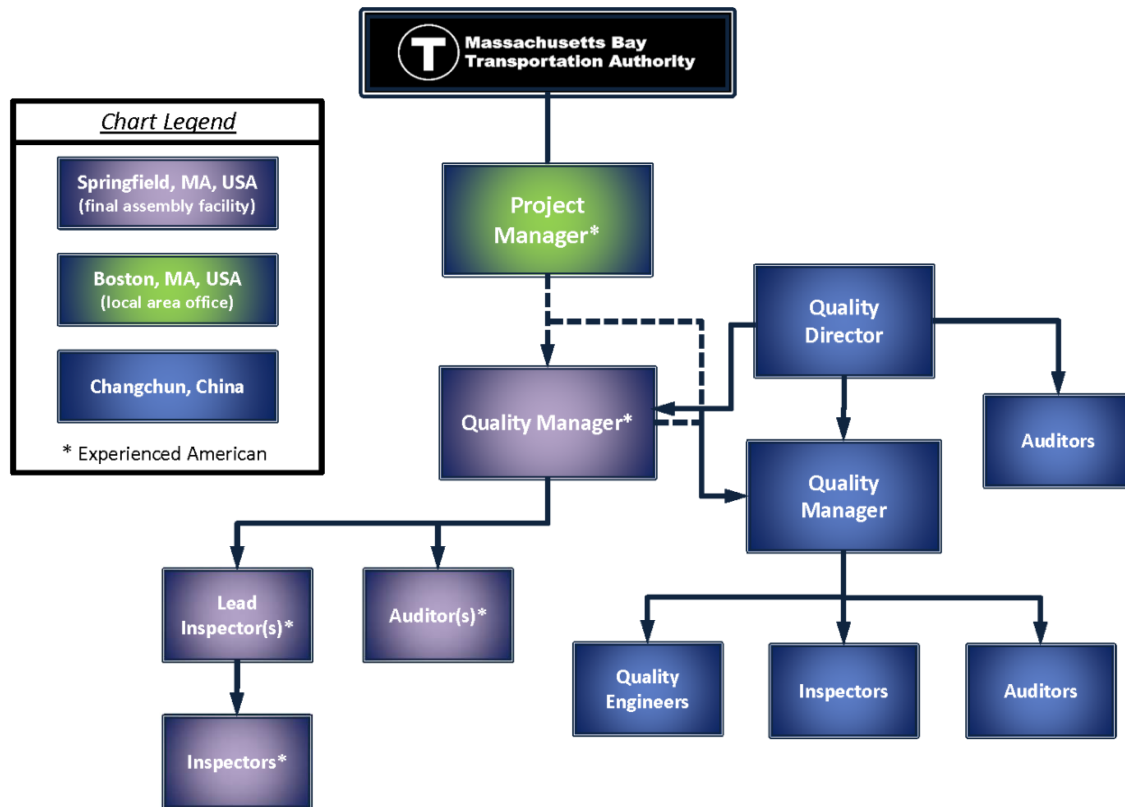
CNR has a full-time, fully staffed Quality Department of professionals experienced with quality control and quality assurance of rail vehicle construction that will be brought to bear for this project. Staff engaged in Quality roles and responsibilities are authorized to report to executive management, separate from project production responsibilities. Quality personnel do report to project management for close coordination of scheduling, performance and follow-up of daily inspections and other Quality activities, however, each individual with responsibility for quality has the authority (through the Quality organization) to disapprove nonconforming product, processes and documentation.

**All Quality staff have authority directly from the CNR corporate Quality Director.**

A dedicated Project Quality Manager will be assigned to the project. Additionally for this project, the Project Quality Manager, in-plant inspectors and personnel conducting Quality audits will be certified to American Society for Quality (ASQ) standards, or approved equal, as required by MBTA.

A functional Organization Chart showing the lines of reporting of Quality Department personnel is shown below. The complete Project Organization Chart identifying the names for each role for the overall MBTA project can be seen in Section 1.1 of this proposal.

Project Quality Manager and all in-plant inspectors and auditors certified by ASQ.



**CNR Quality Assurance Functional Organization Chart  
For MBTA Red/Orange Lines Projects**

The Project Quality Manager stationed at the Massachusetts final assembly site will have overall responsibility for all matters regarding quality for the project, and be MBTA's direct point of contact (through the Project Manager) for quality. To utilize the experience and proficiency with CNR proprietary designs and procedures and to prove that the manufacturing procedures can be effectively executed, the Changchun Quality Manager will lead the Quality oversight for the Pilot cars. The Project Quality Manager will be cross-trained at the Changchun facility to ensure the familiarity and consistency of practices at the final assembly facility with CNR's methods.

#### 4.4 QUALITY MANUAL

CNR is certified to IRIS, ISO 9001:2008 and other international Standards as shown in Section 4.2 above. Our corporate Quality Manual is mature, maintained and incorporated throughout the company, and approved by many international customers. All policies of the Quality Manual will be applied to this project including at the Massachusetts final assembly facility.

MBTA's requirements for the Quality Manual have been carefully reviewed and all 14 elements specified in Section 19.02 of the Technical Provisions (TP) are confirmed to be addressed.

A copy of the corporate Quality Manual and current ISO 9001 certification will be submitted to MBTA after award in accordance with the TP (ref. CDRL 19-01).

## **4.5 PROJECT QUALITY PLAN**

CNR routinely develops project-specific Project Quality Plans (PQP) to comply with international quality standards. Sample pages from CNR Project Quality Plans from similar projects are provided in the appendix to this section, including a table of contents and list of Quality procedures to show the scope of these plans. CNR is now actually in the process of developing the PQP for the MBTA project for submittal to MBTA at NTP + 60 days (ref. CDRL-19-05) in the case the project is awarded to CNR. The following sections provide a brief description explaining how CNR will ensure compliance with each requirement in Section 19.03 of the TP.

### **4.5.1 Project Description**

The PQP will include a description of the project including the scope of work.

### **4.5.2 Project Roles and Responsibilities**

CNR empowers Quality personnel to report directly to executive management, yet this staff works closely with project management on a daily basis to execute project duties with well-defined roles and responsibilities. The Project Quality Manager has responsibility for all Quality activities and documentation for the project. Other lead Quality staff includes the Lead Inspector and Auditor. These key positions will possess certifications in accordance with the American Society for Quality (ASQ) for Certified Manager of Quality/Organizational Excellence (CMQ/OE), Certified Quality Inspector (CQI) and Certified Quality Auditor (CQA) as applicable. CNR additionally agrees to certify all in-plant Quality Inspectors at Changchun and Massachusetts manufacturing facilities to ASQ CQI (ref. Addendum 6). Responsibilities for these primary roles are described below.

#### **Project Quality Manager Responsibilities**

- Responsible for overall development, implementation and compliance of Project Quality program;
- Report to corporate Quality Director and coordinate with Project Manager for all Quality matters for the project;
- Prepare and implement Project Quality Plan;
- Prepare and implement Inspection and Test Plans;
- Manage and supervise project Quality resources including resource allocation;
- Attend project meetings pertaining to quality and ensure Quality action items are resolved;
- Ensure control of quality of product manufacturing including in-house manufacturing, final assembly and supplied products;
- Ensure control of Quality records and documentation;
- Monitor control points and review and report quality performance to Project Manager and Quality Director;
- Implement periodic project audits;

- Define and implement corrective actions/improvements to Quality program as found to be necessary;
- Key support staff include ASQ (or equal) certified lead inspector and auditor;
- Supported by Quality Engineers and specialists in the areas of welding, NDT, supplier quality control, truck assembly, final assembly, testing and commissioning.

#### Lead Inspector Responsibilities

- Report to Project Quality Manager;
- Assist Project Quality Manager with preparing and implementing Inspection and Test Plans;
- Supervise and train Quality inspectors and testers;
- Conduct and document Quality inspections;
- Monitor/control quality of product manufacturing including in-house manufacturing, final assembly and supplied products;
- Monitor/control Quality records and documentation;
- Review Quality records for compliance including car history books;
- Check control points and monitor and report Quality performance to Project Quality Manager.

#### Quality Auditor Responsibilities

- Report to Project Quality Manager;
- Assist Project Quality Manager with preparing and implementing project audit plan;
- Write audit procedure for audit of each Quality area;
- Conduct and document Quality audits;
- Supervise and train Quality auditors;
- Review/monitor audit results to confirm control of product and process quality for in-house manufacturing and supplied products;
- Maintain records of Quality audits.

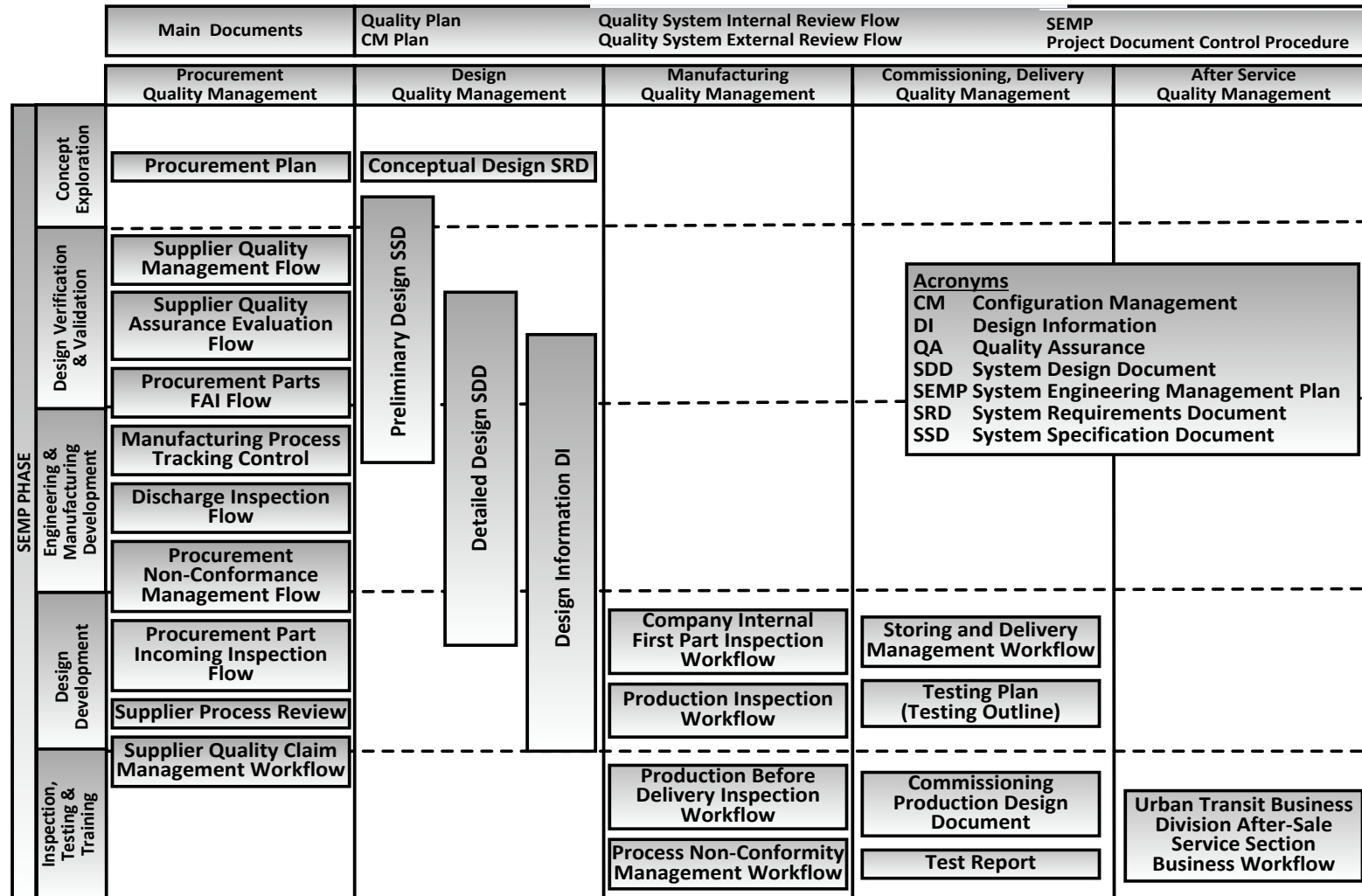
The CNR Project Quality Manager and Quality Lead positions will be stationed at the Massachusetts final assembly facility upon arrival of the first production carshells.

### 4.5.3 Project Specific Design Control Procedures

CNR employs mature design management measures for all projects. The process starts with contract review and analysis of requirements, progresses through methodical design development and concludes with design verification and validation. The key to the effectiveness of our design control process is its systems engineering approach, which examines each part of the car from a systems engineering point of view through a 5 stage process. CNR will apply its Systems Engineering Management (SEM) approach for MBTA's specific requirements regarding design. The roles SEM plays through all phases of the project can be seen in the Project Quality Management Flowchart on the following page. This diagram identifies each procedure that is implemented at each SEM phase and the responsible department.

**CNR has a mature Systems Engineering Management approach to design development and verification/validation.**





Sample Project Quality Management Flowchart through All Project Phases

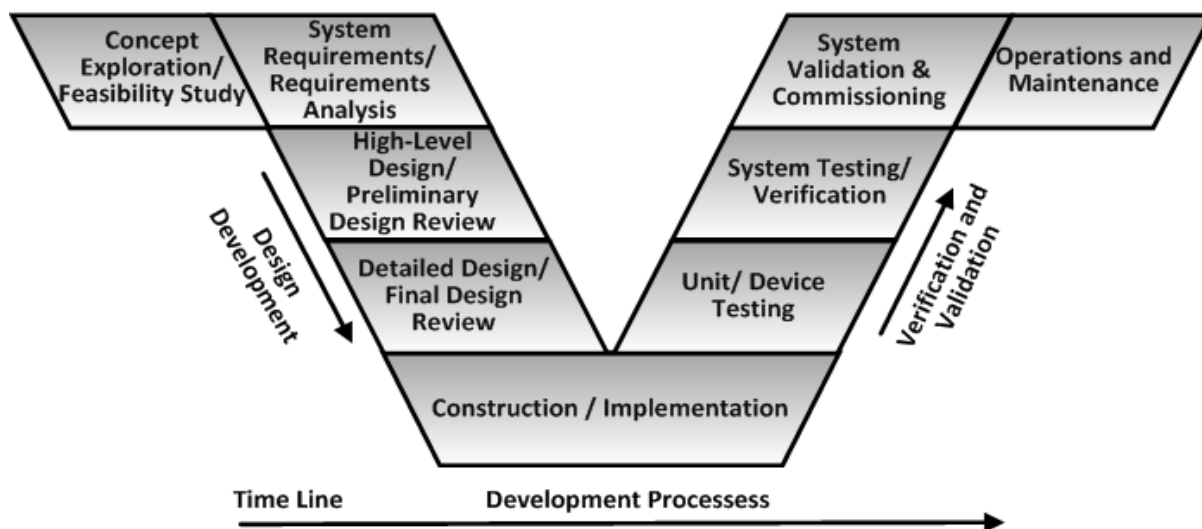
Key elements of the design management program pertain to control and verification of design inputs and outputs.

### Input of Design

Management of design inputs is defined to ensure that they are adequate and properly disseminated through the design and development process. During the process, Requests for Information (RFI) will be issued as necessary and an RFI Log kept by CNR project management office by the Assistant Project Manager to ensure that all needed actions have been taken and issues closed.

### Review of Design Development

The process for review and development of the design is defined. Methodical and progressive reviews are undertaken following development of each trainset system down to its piece parts, then validated that each part and interoperating system function properly and meet Specification requirements. The V-diagram below depicts the decomposition and definition of inputs and the system engineering approach to verification and validation of the outputs. Incremental steps for development of design inputs are shown on the left side of the diagram.



**V-Diagram of Design Verification/Validation**

The SEM approach involves multiple reviews that work together to provide a controlled design management process. Examples of these reviews include System Requirements Review (SRR), System Function Review (SFR), Preliminary Design Review (PDR), Intermediate Design Reviews (IDR) if required, Final/Detail Design Review (FDR), Test Readiness Reviews (TRR), System Verification Reviews (SVR), and others as needed. Actions identified from the reviews will be followed up and rectified in subsequent design activities. The results of reviews will be recorded and maintained by the Design Manager.

### Design Verification and Validation

A process to systematically verify design outputs is developed to ensure that the user/system requirements, preliminary design and final detailed design have been carried out in fulfillment of the Contract requirements. This process follows the SEM approach and includes defining and documenting the following information:

- System functional requirements;
- System interface requirements;
- Assumptions made for system/subsystem parameters and characteristics;
- Proposed methodology of design verification and validation;
- Schedule of design verification and validation activities.

### **Output of Design Development**

The incremental steps for verification and validation of design outputs are shown on the right side of the V-diagram above. At each step, CNR will confirm compliance of design outputs prior to presentation/submittal to MBTA for approval. Any comments from MBTA will be promptly addressed by CNR and suppliers as necessary to achieve approval. Approved design output will be documented and maintained in the project file, and approved designs taken forward to the next design stage or implemented into the final design for final verification and validation. The type of documents for outputs of the design and development process is dependent of the level of design and development in the different SEM stages. CNR ensures that the design documents to be submitted to MBTA will include all TP CDRL items, at a minimum. It is important to note that the verification and validation activities shown on the right side of the V-diagram will be performed for both pilot vehicles and production vehicles. Any findings from the verification/validation exercises will be fed back into the design documents of the left side of the diagram and re-inspected/re-tested as necessary to confirm compliance. Additional avenues for feedback of quality issues are discussed in Section 4.5.12 herein.

#### **4.5.4 Project Specific Production/Manufacturing Procedures**

CNR utilizes documented instructions for manufacturing operations for all its new car construction projects and this same practice will be implemented for this project. This instruction is provided through a combination of production drawings, work procedures, technical data and other information from CNR and suppliers. Written instructions are available to all staff having production responsibilities. Production procedures consist of detailed instructions to perform the work including specifying special tools/fixtures, consumable materials, safety warnings and other relevant information. Procedures will cover installation, workmanship, torque requirements, calibration, and material handling and specify pass/fail acceptance criteria. CNR will ensure that final procedures for production address all items listed in TP Section 19.03.02 item 4.

Production procedures will be developed and revised as necessary to prove them during construction of the pilot vehicles at the Changchun plant. The procedures for final assembly will then be conveyed to the Massachusetts final assembly plant through a technology transfer process. This will entail bringing key production personnel from the U.S. to China for training by our Chinese staff having expert knowledge of these designs and procedures. This will be followed by deployment of Chinese supervisors and trainers to the U.S. for further training of local final assembly staff. In addition to hands-on training in mechanical/electrical assembly, worker training will also include familiarization with workmanship standards and acceptance criteria. After the technology transfer period, some Chinese staff will be retained at the Massachusetts final assembly site to monitor the performance and compliance of U.S. production operations.

All production/manufacturing procedures are subject to revision control. Required procedures will be submitted to MBTA for approval prior to commencement of work. Sample pages of Work Process Sheets from a similar project are provided in the appendix to this section representative of the step by step instruction, tolerances, diagrams and other pertinent information.

#### 4.5.5 Configuration Management

CNR has an established configuration management system to ensure that designs are traceable to requirements, changes are controlled and documented, and there is consistency between the product and its supporting documentation. Configuration management provides documentation that describes what is supposed to be produced, what is being produced, what has been produced, and what modifications have been made to what was produced. Configuration management is closely associated with technical data management and interface management. Configuration control focuses on two areas: identification of configuration and changes to configuration. The Configuration Plan describes procedures for the following functions.

- Identification of configuration: Identify all parts requiring serial numbering; specify procedures for serialization, and record serial numbers for all required items per vehicle specifying the revision level of each part for configuration control of hardware and software.
- Change control: Procedures will document and control any changes to hardware and software configuration that may be initiated by suppliers, CNR, contract change orders (modifications), engineering changes and field modifications.

The configuration control process will ensure that submittal of deliverables to MBTA such as drawings (especially final as-built drawings), specifications, and manuals accurately record the latest revision levels for all equipment.

Details of our configuration management program will be provided in the Configuration Plan to be submitted to MBTA for this project (ref. CDRL 21-09). Some of the section headings from the Configuration Plan are shown below to show the scope and level of detail of this plan.

**CNR Configuration Plan Contents**

Configuration management organization	Configuration controlling
Configuration organization member roles	Engineering change control
Determining configuration structure	Problem/fault management
Selecting configuration items	Documentation control
Configuration numbering	Configuration auditing
Establishing configuration baselines	Subcontractor control
Contract baseline (Award), Functional baseline (SRR),	Project CM schedule/deliverables
Design baseline (System DR), Product baselines	CM Plan updating and approval

#### 4.5.6 Engineering Change Control

Documented procedures are utilized for control of engineering changes so that no changes are made to baseline designs without going through a review process and obtaining CNR and MBTA approval as required. Engineering change control procedures and forms are a part of CNR's Configuration Plan. Engineering changes can initiate from a variety of sources and involve multiple documents. Accordingly, separate forms have been utilized for Engineering Change Notice (ECN), Specification Approval Form (SAF) and Field Modification Instruction (FMI). ECN information will include the reason for the change, updated drawings and other documentation, plan and schedule for modification, vehicles affected (effectivity), and FMI procedures specifying parts required, tooling and other relevant information. Engineering changes initiating as a result of form, fit, function or corrective/preventive changes are captured. The Engineering Change Management



procedure also contains a provision to prioritize a change via a High Priority/Emergency classification to allow rapid processing and approval of critical changes.

Details of CNR's engineering change control procedures will be included in the Configuration Plan to be submitted to MBTA for this project (ref. CDRL 21-09).

#### **4.5.7 Non-conforming Material Control Procedures**

CNR has established procedures to control nonconforming product. Procedures # QA-320, Product Nonconformity Management Flow, and QA-470, Process Nonconformity Management Flow, serve to prevent the use of nonconforming products in accordance with IRIS and ISO 9001 requirements. These procedures set rules for handling nonconforming product and the processes that produced them. They describe in detail the management methods, identification, document archive, classifications and handling of nonconforming products.

Nonconformity Reports (NCR) will be issued for any nonconforming products during project execution. Upon receiving an NCR, affected workshops and/or suppliers must execute certain measures:

1. Nonconforming product must be marked clearly by tagging or other marking procedure and kept in an Isolation Area/prevented from production use until the NCR is resolved;
2. Analyze the reason(s) for nonconformity and propose corrective measures to handle the root issue(s). A nonconformity can only result in one of the following dispositions:



\* MBTA approval required for these dispositions.

3. Ensure responsible departments/companies implement corrective measures including re-inspecting/re-testing reworked product to verify conformity;
4. Conduct trend analysis;
5. Document response and closure of NCR in a timely manner.

If an NCR is proposed for disposition to "use as is" or "repair" (meaning any variance from Specification requirements or configuration), CNR will submit documentation of this to MBTA for approval before such disposition can be implemented, and the NCR will become part of the vehicle's manufacturing history book. In the case of "repair", written procedures for repair must also be approved by CNR and MBTA.

A Quality Engineer will be responsible for monitoring the status of NCRs generated during procurement and manufacturing to ensure that they are properly rectified, verified and closed. A sample NCR form from a similar project can be seen in the appendix to this Section.

Remedial actions to correct nonconformities are developed and controlled following procedures to ensure that corrective/preventive actions are effective. Sample pages from our Corrective/Preventive Measures Management Process are included in the appendix to this Section indicating the activities, timing, responsible party and other information showing the scope of this process.

#### **4.5.8 Procurement and Vendor Quality Procedures**

CNR has documented procedures for control of subcontractors/suppliers including qualification of suppliers, audit and performance monitoring. In addition, CNR Quality staff performs other

activities to check supplier product and processes such as first article inspection, source (pre-shipment) inspection and receiving inspection discussed in the following sections.

CNR will require pre-qualification of potential suppliers who have not previously worked with CNR. These suppliers are first evaluated to prescribed criteria including company capabilities (facility, equipment and resources), financial viability, overall management and Quality management, and ability to implement QA/QC procedures. Records of previously demonstrated capability and performance on other projects including product standards achieved are also reviewed during the evaluation. Suppliers already having a working relationship with CNR are subject to routine checks of key criteria to ensure that their potential remains valid before engaging them in new work. A list of approved suppliers is maintained and reviewed regularly through a performance monitoring and appraisal process. Any suppliers that fail to meet the requirements and/or have not performed satisfactorily are removed from the list. In the case that suppliers are changed, CNR will notify MBTA of these changes for MBTA concurrence as required.

Quality, Procurement, Production, Engineering and Business departments participate in assessment of subcontractor/supplier performance, which evaluates the supplier's quality, procurement, production, logistic, technology, project management, after sales service and other indicators of performance. Suppliers are rated either A, B, C or D according to their score and a performance report is issued each year. Suppliers with level C and D grades will receive an on-site review and a written notice will be issued for the supplier to rectify cited issues. CNR's Quality Department will verify satisfactory implementation of supplier corrective actions to improve performance in the identified areas. Sample pages from our Supplier Audit Management Process procedure are included in the appendix to this Section indicating the activities, timing, responsible party and other information showing the scope of this process.

Other aspects of CNR's supplier management procedures include review of supplier tender offers, joint review of requirements with suppliers including quality, safety and environmental items and written resolution of any ambiguities, and on-site capability assessment. Suppliers being considered to perform services such as construction or final assembly work will receive additional, different evaluation from those supplying product only.

Diligent management of suppliers in this way will ensure the delivery of qualified product and services to MBTA.

#### **4.5.9 Inspection Procedures**

Documented procedures will be utilized for Quality inspections of all work performed for this project by CNR and its suppliers. The major controlling documents for inspections under the Project Quality Plan are the Inspection and Test Plans (ITP). CNR has established 5 ITPs organizing all inspections into the following areas:

- Supplied products
- Carbody production
- Truck production
- US final assembly
- Vehicle testing

Each ITP requires the approval of the CNR Project Quality Manager and MBTA, and will address the following information:

1. Sequence of inspection and test activities;
2. Inspection and testing requirements;
3. Applicable specification(s) and acceptance criteria including drawing/doc. no. and revision;
4. Level of inspection required with provision for hold point inspection/witnessing by MBTA;
5. Any certification requirements.

Supporting each ITP are detailed inspection procedures and forms to direct the inspection activity and record findings and remedial actions. Sample pages of inspection documents from a similar project are provided in the appendix to this Section, including an Inspection Process Check Card specifying items to be inspected, acceptance criteria and other relevant information.

CNR's approach for each primary inspection activity is described in the following sections.

#### **4.5.9.1 QC/QA Role at Final Assembly Site**

CNR will establish comprehensive Quality oversight at the U.S. final assembly site that will provide direct checking and control by CNR of all work done at this site. This scope will cover receiving inspection of materials, in process inspection, and outbound final inspections and testing of each vehicle, plus additional audits of all work performed. Review of documents will also be an inherent part of CNR verification especially of the manufacturing history records for truck assemblies and completed vehicles (i.e. Car History Book). CNR will specifically verify that the scope of work done at the final assembly site includes the items stipulated for final assembly in Massachusetts in MBTA's Contract.

**CNR Quality staff will directly supervise U.S. final assembly.**

The CNR Project Quality Manager and Quality Lead positions will be stationed in Massachusetts full-time – actually, key project management staff will spend much time at both the Boston local office and Springfield final assembly facility. This key staff will arrive at the final assembly facility at least 2 weeks before arrival of the first production carbody and work with the Project Manager to gauge and control the acceptability of work and product. These individuals will work closely with other Quality staff deployed to the final assembly plant from CNR headquarters especially during the technology transfer period at the beginning of final assembly of the production cars. This will entail bringing key QA/QC personnel from China for training/oversight of local final assembly staff by CNR staff proficient with these procedures. After the technology transfer period, some of this direct CNR staff will be retained at the final assembly site to monitor the compliance and performance of U.S. QA/QC operations throughout the period of performance.

**A technology transfer process will be used to train U.S. final assembly staff.**

Highlights of CNR's QA of U.S. final assembly operations are summarized in the following points:

- CNR will retain direct "ownership" and responsibility for Quality at the final assembly site;
- CNR will employ a technology transfer process to train U.S. personnel at Changchun during the pilot car phase;
- CNR will have direct QA staff at the final assembly site throughout the period of production;
- CNR will establish hold point inspections in the production line beyond which work cannot progress without CNR and MBTA approval (as mutually agreed);
- Hold points will include comprehensive pre-shipment inspection and testing prior to release of any vehicle for delivery to MBTA;

- Open items will be documented and tracked until closure is verified;
- In addition to routine QA of in-process and outgoing work, CNR will conduct audits of the final assembly plant's compliance with procedures and requirements.

Further details about CNR QA/QC coverage of the U.S. final assembly site are provided in the descriptions for each respective area below.

#### **4.5.9.2 First Article Inspection**

CNR will implement a First Article Inspection (FAI) program to ensure that all components meet contract specifications prior to commencement of production product. This process will include documented verification of compliance by CNR (Pre-FAI) prior to joint inspection with MBTA. Major components will undergo FAI by CNR Quality staff including all items named in Section 19.05C of the TP.

The FAI process can be divided into three primary stages: pre-requisite activities, pre-FAI and formal FAI.

##### **Pre-requisite activities**

CNR will ensure that certain pre-requisite activities are completed prior to engaging in FAI. This includes such items as having an executed Purchase Order with clearly defined work scope, specifications and QA/QC requirements, the supplier's passing CNR's QA evaluation process and achieving MBTA's concurrence, and having drawings, specifications, test procedures and other relevant documentation reviewed and approved by CNR and MBTA. This will ensure that FAIs are effective to establish definitive baselines for subsequent production.

##### **CNR Pre-FAI**

Next, CNR will conduct a Pre-FAI to verify that the product and its manufacturing processes comply with Specification and Quality requirements. Any open items found during the Pre-FAI will be corrected and closed and a complete package of documentation from the Pre-FAI will be submitted for MBTA review before the formal FAI is undertaken.

##### **Formal FAI**

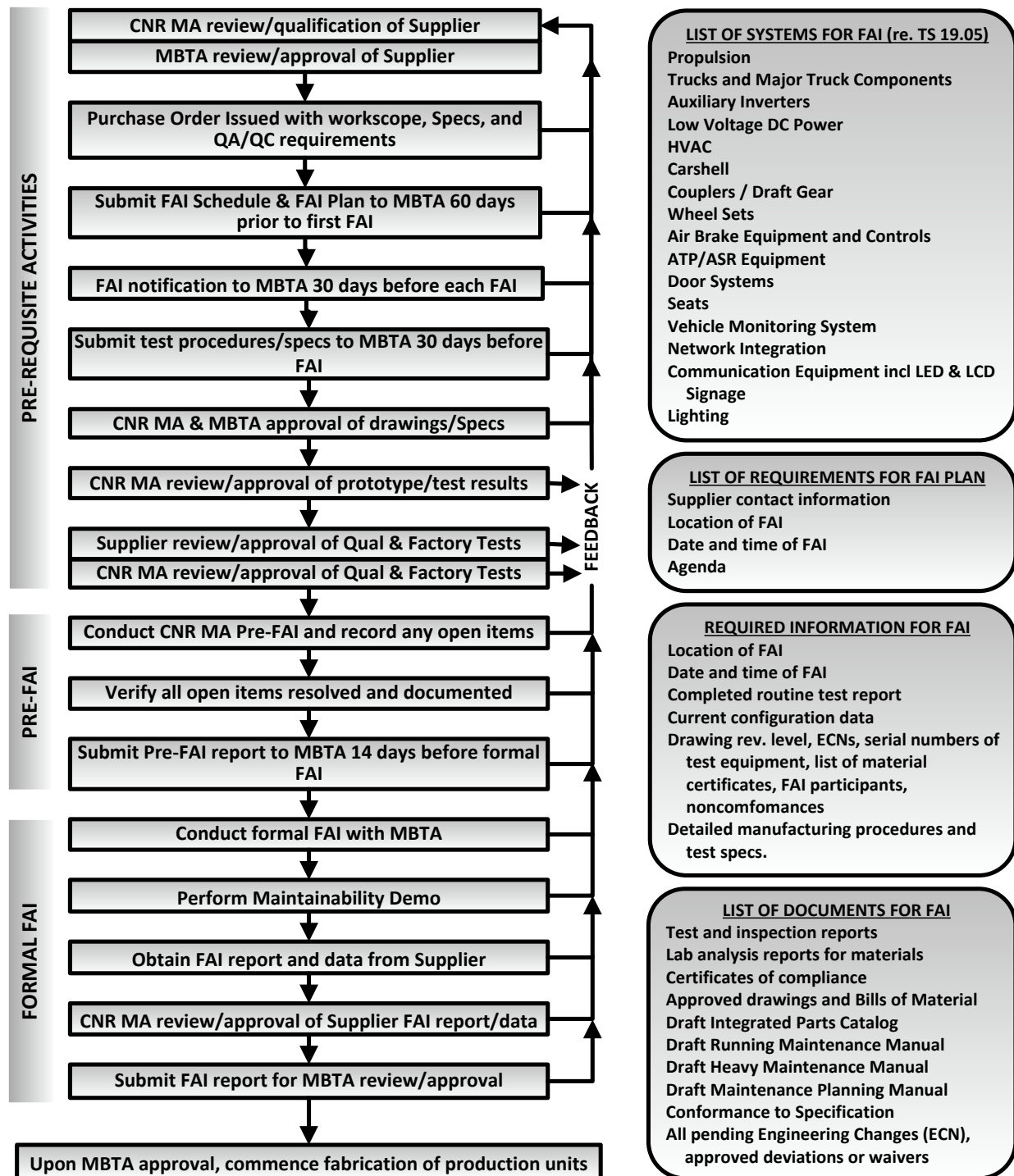
After all this preparatory work, the formal FAI will be scheduled with MBTA and CNR's Quality team to jointly verify and approve each item/system for the Red and Orange Line vehicles. Production will not be allowed to commence until all open items from the FAI have been satisfactorily resolved and MBTA has reviewed and approved the FAI document submittal.

CNR acknowledges the amount of notice specified in the TP and will plan the project schedule to be able to provide the required notices. This includes submittal of the FAI plan and schedule to MBTA 60 days before the first FAI, 30-day notice of each specific FAI, submittal of test procedures and specifications 30 days before FAI, and submittal of CNR's completed Pre-FAI report with supporting data 14 days before FAI.

A flowchart and description of each step of CNR's FAI process is provided below. This flowchart has added the unique requirements of MBTA's RFP Section C5.19 and TP Section 19.05 to CNR's pre-existing process.



## First Article Inspection Process Flowchart Per RFP Section C5.19 and TP Section 19.05



#### 4.5.9.3 Incoming Inspection

CNR routinely conducts inspection to verify that incoming materials comply with Specifications before they are used for production and this same practice will be applied by CNR for this project. The scope of incoming inspection checks the conformity of products including appearance, quantity, critical and interface dimensions, marking, certificate of chemical and physical properties, certificate of compliance and other items as denoted on drawings, technical specifications, procurement contract, Quality documents, or other requirements. Incoming inspection procedures will identify the criticality of inspection and identify items that are required to be inspected 100% and items that are sampled at various frequencies. Occurrence of Quality or performance problems will cause sampled products to move to heavier sampling or to 100% inspection as determined necessary. Incoming inspection records are maintained by the QA Department.

#### 4.5.9.4 Hold Point Inspection

CNR uses hold point inspections to control production work and will establish hold points strategically placed in the production sequence beyond which work cannot proceed without CNR QA approval. This procedure shall specifically ensure that MBTA approval is obtained at those points designated in Section 19.03.02 of the TP.

Already at this preliminary time, CNR has established the following hold points for production of MBTA's vehicles. These inspections include the items specified in MBTA's TP and additional inspections identified by CNR Quality staff. This list will be submitted to MBTA as part of the Quality CDRL items and revised as may be necessary for MBTA approval.

**CNR already identified proposed hold points for this Project.**

#### Planned Inspection Hold Points for MBTA Project

<u>At Carshell Site</u>	<u>At U.S. Final Assembly Site</u>
<ul style="list-style-type: none"> <li>• Prior to release from each Workstation</li> <li>• Carbody structure</li> <li>• Carbody Water-tightness Test</li> <li>• Piping and Wiring</li> <li>• Prior to Installation of Interior Wall Liners, Floor and Ceiling</li> <li>• Carbody Pre-shipment</li> </ul>	<ul style="list-style-type: none"> <li>• Prior to release from each Workstation</li> <li>• Underfloor Equipment Installation</li> <li>• Interior Equipment Installation</li> <li>• Exterior Equipment Installation</li> <li>• Completely Assembled Truck</li> <li>• Truck Installation</li> <li>• Final Car Inspection</li> <li>• Final Car Functional Testing</li> <li>• Final Car Water-tightness Test</li> </ul>

Details pertaining to hold point inspections will be included in their respective ITPs to be submitted for MBTA approval. In addition to these, First Article Inspections and qualification tests also represent hold points also enumerated in the ITPs.

#### 4.5.9.5 Source Inspection

CNR verifies and controls the compliance of supplied product by inspecting product at the supplier prior to delivery to CNR as necessary. Source inspection includes thorough physical inspection of the product to specification requirements, static and functional testing if required, and review of supporting documentation including material certifications, certificates of compliance, smoke emission/ flammability test results, and other documents. CNR source inspections will be

documented and available to MBTA for review. Source inspection may also include other types of inspection such as FAI, or in-process inspection before a product is ready for shipment.

Items with critical importance are identified as 100% source inspected items and must be inspected and approved by CNR QA at the supplier site before they can be shipped. If products are found with problems at incoming inspection or at other times, CNR may put these products on the 100% source inspection list also. Such items will remain on the 100% source inspection list until a satisfactory performance record is established, at which time CNR will change this designation back to incoming inspection only.

As for all inspections, source inspections are fully documented identifying the item(s) inspected, name of inspector, supplier and MBTA representatives, results of attributes inspected with acceptance criteria, and any findings.

#### **4.5.9.6 Pre-Shipment Inspection**

Pre-Shipment Inspection is defined in MBTA's RFP as "Source Inspection of product, parts, components, subsystems and/or systems conducted immediately prior to releasing items for shipment to Contractor or other destination". Procedures for supplied product are described in the preceding item for Source Inspection and procedures for pre-shipment inspection of completed vehicles are explained below.

Prior to releasing cars from CNR's final assembly location to MBTA, CNR will perform a complete pre-shipment inspection of each vehicle. The pre-shipment inspection will be a hold point activity consisting of comprehensive inspection of vehicle undercar, interior and exterior, functional testing, and review of build-up documentation (especially the Car History Book). Any open items will be corrected and verified by CNR before requesting MBTA's pre-shipment inspection and concurrence to release for shipment. Any open items that may still be open at time of shipment will be documented on the vehicle's authorization for shipment form and concurred with by MBTA in order for the car to be released for shipment. Also see QC/QA Role at Final Assembly Site and Hold Point sections above for related details.

#### **4.5.9.7 Receiving Inspection**

Vehicles and materials delivered to MBTA will be inspected upon receipt at MBTA delivery location(s). This inspection will include checking of quantity and serial number(s), inspection for damage that may have occurred during transit, removal of any coverings, blocking or packing that may have been applied for shipping, and verification of any documents required to be submitted with the product. Receiving inspections will be documented and identify the date, receiving inspector, MBTA representative and any findings. Findings that require remedial action will be promptly addressed by CNR; if these actions entail supplier responsibility, CNR will coordinate this between the supplier(s), CNR and MBTA.

#### **4.5.9.8 Field Modification Inspection**

CNR will ensure that there are written instructions for any modifications to equipment in the field and verify that such procedures are satisfactorily accomplished. Written field modification instructions (FMI) will be submitted to MBTA for approval prior to their implementation. CNR field inspection will be performed for FMI work done by CNR, subcontractors/suppliers, or by MBTA personnel for a warranty claim, and will include review of supporting documents such as material certificates, verification of worker certification such as AWS, verification of equipment certification such as calibration, and inspection and testing of completed work as necessary. Documentation of

field modification inspections will be available to MBTA. CNR will work closely with MBTA to obtain safety training, certification or clearance that may be needed for access to equipment that is on MBTA property and CNR will coordinate all field modification work with MBTA including the time, access, escort and other needs.

#### **4.5.9.9 Pre-Acceptance Inspection at Carhouse**

CNR will participate in Pre-Acceptance Inspection of each vehicle at MBTA's Carhouse. This inspection will include inspection of each vehicle for damage during transit, removal of any coverings, blocking or packing that may have been applied for shipping, and power-up functional checks and testing for commissioning. Written procedures for Pre-Acceptance Inspection and testing will be submitted to MBTA for approval prior to performance.

#### **4.5.10 Test Procedures**

CNR will develop a comprehensive testing program for the MBTA vehicles in accordance with Section 20 of the TP. Testing will consist of qualification tests (to be done on one part/vehicle of each type) and routine tests (to be done on all parts/vehicles) that will be done at the supplier site, CNR, and/or at MBTA as applicable. All required tests will have documented procedures and results and CNR will submit these to MBTA for review and approval. CNR will schedule all testing per the Master Project Schedule, submit prerequisite documents to MBTA for review and approval prior to performance of testing, and notify MBTA of each test for witnessing.

The major controlling documents for the test program include a Master Test Plan identifying every test to be done and Inspection and Test Plans (ITP) indicating the location and sequence of testing. CNR has established the following 5 ITPs organizing these tests:

- Supplied products
- Carbody production
- Truck production
- US final assembly
- Vehicle testing

The test program will cover all areas noted in the RFP including life-cycle testing, material testing, routine testing, system testing, software testing, integration testing, pilot car testing, vehicle testing and acceptance testing, and list the individual tests for each category. The test program will additionally address non-car tests specified in Section 2 of the TP including validation of track conditions/geometry, supply voltage transient studies, and other tests as required. Sample pages showing the test plan matrix from an ITP from a similar project are provided in the appendix to this Section to represent the breadth of testing and detail of tracking.

Each test will have a documented test procedure and report that specifies the purpose of the test, location, required tools, prerequisite tests or activities, acceptance criteria, name and signature of tester, and software and hardware revision level where applicable, following the standard format approved by MBTA. Test reports shall additionally record all measured readings also attaching chart recordings, electronic test data, video/photos, or other supporting media as appropriate. CNR will submit each test procedure to MBTA for approval a minimum of 3 months prior to the planned test date. Notification of test dates will be provided to MBTA at least 30 days prior to the test. Test reports will be submitted to MBTA within 30 days of performing each test. Sample pages from test procedures from a similar project are included in the appendix to this Tab.



#### 4.5.11 Audits

CNR conducts audits of the Project's QA/QC performance on 2 levels.

- Audits of compliance with CNR's corporate Quality Manual. These audits are typically conducted by personnel outside of the project commissioned by the Quality Director.
- Audits of compliance with PQP requirements. These are conducted either by CNR on-site QA or by staff dispatched from Changchun headquarters. These audits include:
  - Audits of compliance of manufacturing at carshell and final assembly plants with project procedures/specifications;
  - Audits of supplier compliance with project procedures/specifications; (also see Procurement and Vendor Quality Procedures Section 4.5.8 herein).

CNR conducts routine internal audits and will adopt these procedures for this project and conduct biannual audits of the PQP in accordance with Section 19.03.01C of the TP.

All audits will be documented with follow-up and verification of satisfactory implementation of corrective actions. Audit documentation will be available to MBTA.

Auditors will be certified as described in Section 4.3 of this document.

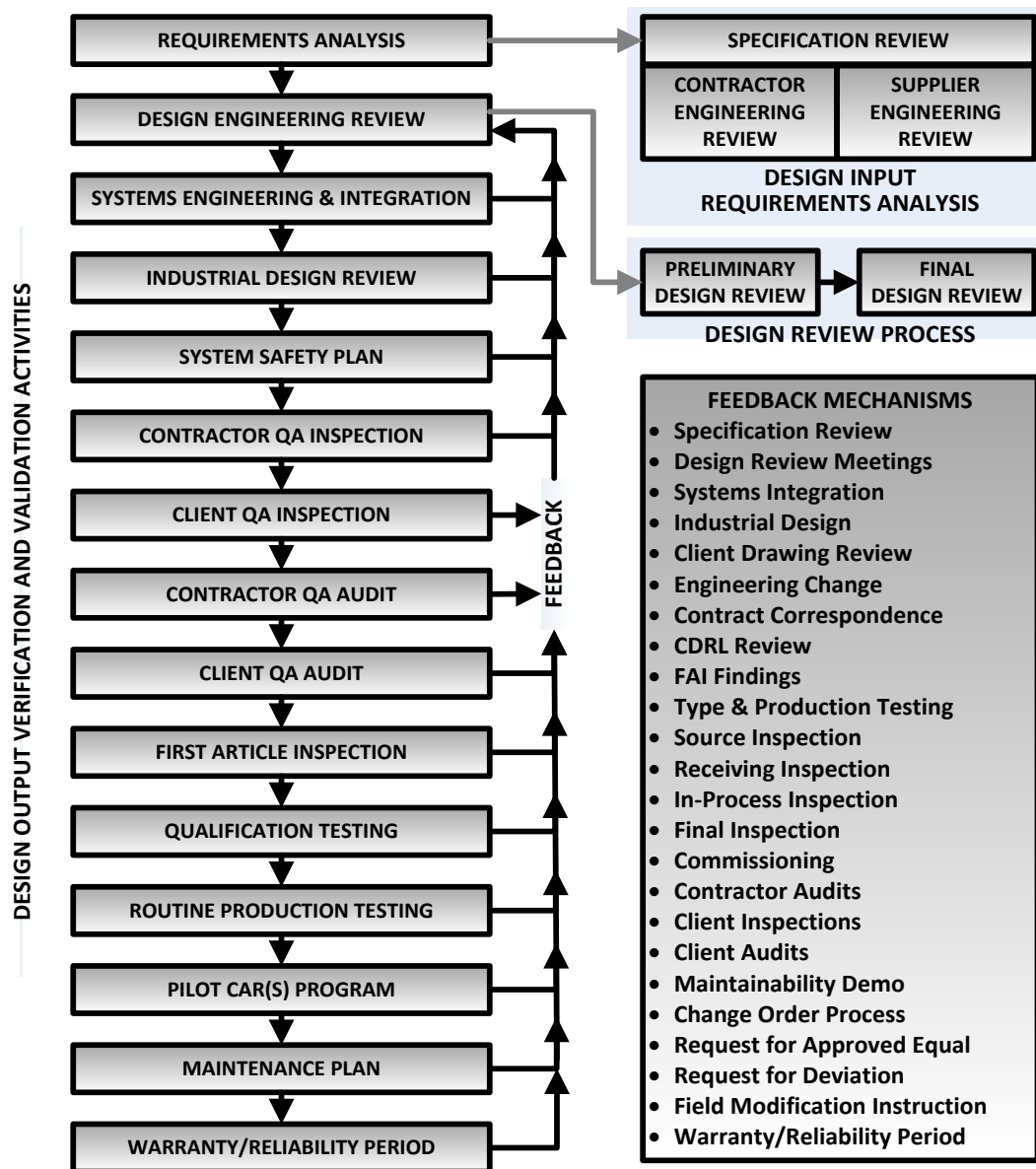
#### 4.5.12 Feedback Mechanisms

CNR provides many avenues for feedback to promptly rectify issues affecting quality and compliance through all phases of the project. While procedures for feedback of quality issues are part and parcel of each Quality activity described in the previous sections, a summary of CNR feedback mechanisms for the project is illustrated in the following diagram.

**CNR processes provide  
multiple effective opportunities  
to feed back Quality issues**

The left side of the diagram lists the major activities that provide the opportunity for feedback. These activities begin with requirements analysis performed immediately upon award of the contract and progress through design review and verification/validation events to the reliability and warranty period. Feedback obtained for any item in this list is carried back to the appropriate previous input point(s) as far back as necessary in order to implement changes/corrections to correct the deficiency and prevent recurrence. This feedback loop would recur until the problem has been verified to be corrected.

The right side of the diagram provides a table showing primary feedback mechanisms naming their activities, forms and processes. Each of these items has an accompanying documented procedure. MBTA is given opportunity to provide Quality feedback at all of these points.



**Feedback Mechanisms through All Project Phases**

#### 4.5.13 Warranty Management Procedures

CNR will provide continued support to ensure that vehicles perform as intended and achieve the required reliability. CNR will assign a Warranty Coordinator on-site at MBTA for a period of 2 years after Conditional Acceptance of each car. The Warranty Coordinator shall respond to warranty calls within one business day of notification. CNR will carefully track the performance of each car and system and effect repairs as may be needed to achieve reliability requirements. Parts usage will be monitored and adequate inventory levels maintained. CNR standard procedure will be to provide replacement parts within 10 days of each warranty claim notification. In the case that this cannot be achieved due to supplier lead times or other reason, this will be promptly communicated to MBTA for authorization of the best planned replacement date. Documented failure reports will be provided for all repaired parts. There will be a one-year warranty for all warranty replaced or

repaired parts. In the event that a warranty claim finds that the equipment had been changed or altered after delivery without CNR's knowledge, CNR will be relieved of warranty obligations for that item. CNR understands that warranty work is to occur on MBTA property and be performed by MBTA personnel whenever possible. MBTA labor necessary to be used in connection with warranty work will be tracked and reimbursable to MBTA by CNR at the Contract agreed rate.

CNR will submit a Warranty Plan for MBTA approval 3 months prior to delivery of the Pilot Cars, (ref. CDRL 21-10). The plan will describe warranty staffing, maintenance of inventory, and procedures for servicing of delivered products. The plan will include procedures for handling ECNs and FMIs and forms for implementation of any changes should they be required after delivery of vehicles. An FMI log listing all FMIs and the status of implementation of each one will be maintained until expiration of the warranty period. The general warranty period will be 2 years for each vehicle, with carbody and truck structures warranted for 5 years.

#### **4.6 SAMPLE PROCEDURES AND DOCUMENTATION**

This section contains sample CNR Quality procedures/documents as requested by the RFP. Sample pages from CNR documents demonstrating use and familiarity with Quality procedures from similar projects are included for the following processes:

- List of Quality Procedures
- Project Quality Assurance Plan Table of Contents
- Project Inspection and Test Plan Test Matrix
- Sample Quality Inspection Check Card
- Sample Nonconformity Report
- Sample Test Procedure
- Sample Work Instruction
- Supplier Audit Management Process
- Corrective/Preventive Measures Management Process

	<b>Contract C6554-07E Rolling Stock</b>	 <b>长春轨道客车股份有限公司</b> CHANGCHUN RAILWAY VEHICLES CO., LTD.
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#### Appendix E - List of Quality Procedures

Item 序号	Procedure Ref.	Procedure Name	Review Status
1	QM-A-7035-02-0005	Inspection and test plan (ITP)	Approved
2	Q/CCG-C1-ZL-020C-2009	Design and development procedure	Approved
3	Q/CCG-C2-ZL-037B-2009	Control procedure for customer communication	Approved
4	QA-4B0	Product traceability management process	Approved
5	QA-4E0	Product identification management process	Approved
6	Q/CCG-C1-ZL-024B-2008	Special process control procedure	Approved
7	PMC-400	Product protection and delivery control procedure	Approved
8	SM-A00	Record control procedure	Approved
9	QA-120	Quality system internal audit management process	Approved
10	QA-1C0	Corrective and preventative management process	Approved
11	IN-400	Hand tooling management process	Approved
12	IN-Y00	Long-life instrument control process	Approved
13	Q/CCG-C5-ZL-016C-2009	Data analysis management procedure	Approved
14	QA-2F0	Supplier quality claim management process	Approved
15	QA-420	Procured parts incoming inspection process	Approved
16	QA-420	Final product quality check process	Approved
17	QA-430	Production quality inspection process	Approved
18	Q/CCG-C5-JL-001-2009	Measurement management manual	Approved
19	QA-440	Tool management process	Approved
20	SM-320G-001V1.0	Measuring instrument management and calibration process	Approved
21	QA-470	Nonconformity management procedure	Approved
22	QA-320	Procured parts nonconformance process	Approved
23	QA-480	Quality door management process	Approved
24	QA-200	Supplier management process	Approved
25	QA-330	Product FAI process	Approved
26	QA-410	Process FAI process	Approved
27	QA-210	Supplier Quality Assurance capability assessment	Approved
28	QA-230	Supplier process review	Approved
29	QA-240	Supplier quality performance evaluation	Approved
30	QA-310	Discharge inspection process	Approved
31	R-006	Production inspection process	Approved
32	R-010	Quality plan and Quality Control plan process	Approved
33	R-024	Records management specification	Approved
34	R-001	Technical document control	Approved
35	P-007	Production process management process	Approved
36	SM-320BG-001V4.0	International welder qualification test and review process	Approved
37	UT-A00	Urban Transit Business Division after sale service management process	Approved

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Attachment to Tab I.4, QA Plan

Sample Documents

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	<b>Contract C6554-07E</b> <b>Rolling Stock</b>	 长春轨道客车股份有限公司 中国北车 CHANGCHUN RAILWAY VEHICLES CO., LTD.
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**Project Quality Plan (SIL)**

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	<b>Contract C6554-07E</b> <b>Rolling Stock</b>
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Sample Documents

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- 2) Safety belt must be used while working on vehicle roof. 在车顶作业, 必须佩带安全带
- 3) Safety appliances needed for this work. 安全用品



5 Commissioning Conditions 试验条件

The following conditions must be fulfilled before carrying out the test.

No.	Test Conditions
1	Insulation and voltage resistance tests are completed.
2	Vehicle wiring continuity test is completed. 车辆布线连续性试验完成
3	DC110V circuit of the vehicle works properly. 车辆 DC110V 电压电路工作正常
3	AC415V circuit of the vehicle works properly. 车辆 AC415V 电压电路工作正常

6 Implementation of Test 试验实施

The test records herein are required documents to demonstrate that the required routine tests have been successfully performed. The check boxes in the records indicate verification of test progress by test personnel. Check boxes in the records should be marked with "X".

本规程中的试验记录是用于证明例行试验成功的有效文件, 记录中的选项框便于使试验人员能够按试验进度, 记录试验结果, 记录中"X"进行标记。

All test steps must be successfully completed. For a failed test, the cause must be determined and restoration made so that a precise result may be achieved in a subsequent test for the same test item.

所有的试验步骤必须成功完成, 如果某项试验不成功, 必须确定原因并且必须进行修复, 以便该试验项目随后进行试验能够取得正确的结果。

The test result for any incomplete test item must be left blank in the test record. Marking in the record is allowed only after successful completion of the test.

如果试验记录中, 某一试验项目未完成, 试验记录中相应的结果必须保留空白。试验成功完成后方可在记录中进行标记。

7 Saloon A/C test 客室空调试验

7.1 Circuit breaker test 空气开关断路器试验

This test will be conducted in Changchun only. 本试验仅在长春确认。

Check that the model number of the vehicle circuit breaker complies with drawing and circuit breaker functions properly. 检查车辆空气开关断路器型号是否符合图纸, 动作是否良好。

1 Test Objective 试验目的

This document stipulates the test procedures for the installation tests which shall be carried out on a routine test basis for each train.

该文件规定了下列设备例行试验规范内容:

The saloon air conditioning system test is intended to verify the integrity of functions of air conditioning equipment in the saloon and confirm that technical requirements of the contract are met. (Refer to PS/15.2).

客室空调系统测试是为了确认客室空调设备功能的完整性以及是否满足合同的技术要求。(根据 PS/15.2)

The driver's air conditioning system test is intended to verify the integrity of functions of air conditioning equipment in the driver's cab and confirm that technical requirements of the contract are met. (Refer to PS/15.21)

司机室空调系统测试是为了确认司机室空调设备功能的完整性以及是否满足合同的技术要求。(根据 PS/15.21)

The linear fan test is intended to verify the functional performance of the ventilation fan and swinging mechanism. (Refer to PS/15.22)

幅流风机试验是为了验证风机摆动机构的工作性能。(根据 PS/15.22)

2 Applicable Documents 参考文件

IEC 61133:2006 - Rolling stock - Rolling stock - Testing of rolling stock on completion of construction and before entry into service

IEC 61133:2006 - 铁路轨道车辆 - 铁路轨道车辆在完工后和投入运营前轨道车辆的测试

Contract C6554-07E Rolling Stock Specification - Clause 15

合同 C6554-07E 全部车辆规格书 - 第 15 条

3 List of Test Equipment, Instruments, and Tools 试验设备、仪表、工量和工具清单

No.	Required Test Equipment, Instruments, and Tools	Quantity
1	Digital multimeter 数字万用表	1 piece/person 1 个/人
2	Electrician tools 电工工具	1 set 1 套
3	Phase-sequence meter 相序表	1 piece 1 块
4	Clamp-on ammeter 钳形电流表	1 piece 1 块
5	Vane anemometer 风速仪	1 piece 1 块

4 Safety Requirements 安全规定

- 1) Before any work takes place on the vehicle roof, ensure that catenary power is turned off and locked out. 上车顶作业前, 需确认接触网无电。

 <b>MTR</b>	<b>Contract C6554-07E</b> <b>Rolling Stock</b>	 <b>长春轨道客车股份有限公司</b> <b>中国北车</b> CHANGCHUN RAILWAY VEHICLES CO., LTD.
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## 7.2 Check circuit breaker voltage 空气开关断路器电压检查

This test will be conducted in Changchun only. 本试验仅在长春确认。

Use a digital multimeter to measure the circuit breaker voltage according to the annex and record the measurements in the record. The range of voltage tolerance is  $\pm 5\%$ . 使用数字万用表按照附件测量车辆空气开关电压, 并记录在附件中, 电压公差范围是 $\pm 5\%$ .

Use a phase-sequence meter to verify that circuit breaker of the vehicle has correct phase sequence according to the annex. 使用相序表按照附件确认车辆空气开关断路器相序正确

## 7.3 Function test 功能检查

### 7.3.1 A/C function 空调功能

The following will be conducted in Changchun and Hong Kong. 以下试验需在长春和香港确认。

Close circuit breaker CMB inside air conditioning unit (supply for compressor)

闭合空调机组内部断路器 CMB (压缩机供电)

Close circuit breaker SFB inside air conditioning unit (supply for fan)

闭合空调机组内部断路器 SFB (供风风扇供电)

Close circuit breaker CFB1 inside air conditioning unit (supply for condenser 1)

闭合空调机组内部断路器 CFB1 (冷凝器1供电)

Close circuit breaker CFB2 inside air conditioning unit (supply for condenser 2)

闭合空调机组内部断路器 CFB2 (冷凝器2供电)

Switch the master control (master control) inside air conditioning unit to "ON".

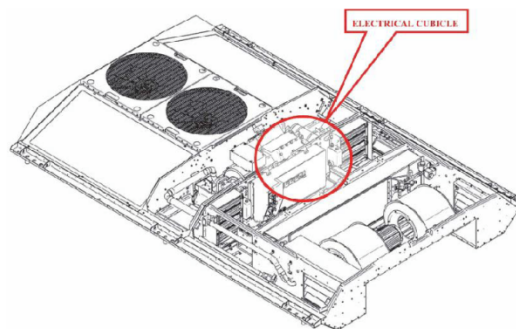
将空调机组主控开关 DCB (总控制) 至"ON"位

Breaker location from left to right: CMB, SFB, CFB1, CFB2, DCB, EIVIB

从左至右依次为 CMB、SFB、CFB1、CFB2、DCB、EIVIB


The following will be conducted in Changchun only. 以下试验仅在长春确认。

Use a digital multimeter to verify that the resistance difference between all phases of the circuit breakers should not be greater than 10% of the average value of phases; (to indicate that shorting does not exist between phases). 使用数字万用表按照附件确认车辆空气开关各相间电阻值差应不大于相间阻值平均值的 10%, 以此确定各相间无短路现象



DAR No.: C655407E-VAC-SP-018	<b>Test Specification for Ventilation/ Air Conditioning System</b>
Rev No.: B-001	Page 4 of 18



 长春轨道客车股份有限公司 中国北车 CHANGCHUN RAILWAY VEHICLES CO., LTD.		<b>Inspection Process Check Card</b>		接轨世界 牵引未来 Join the World Drawing the Future	
Project: Rio Line 1A Project, Brazil		<b>Installation of door mechanism</b>		Doc. No. QM-A-7035-04-4035	
Customer: Metro Rio				Rev. A	
Applicable car type: DK136, DK137, DK138 and DK138A				Trainset No.	
Steel grade of car body:				Car type/number of cars:	
Drawing	DK136-35-00-000	Rev.	Technical doc.	客装 692(DK136-138)-007	Rev.
No.	Check item	Quality criteria/record of measured value			Confirmation by inspector
1	Review of Self Check Record	The content of record, operator's signature and date are filled in completely and correctly.			<input checked="" type="checkbox"/>
2	Self Check Record includes at least	Height of door opening: 1960.5 (-2, +3) mm; Width of door opening: 1900 (0, +4) mm; Difference of diagonal lines ≤1mm; By measuring with plumb line, check that difference of distance between both sides of steel structure door is ≤1mm.			<input type="checkbox"/>
3	Check of mechanism installation dimension	The height of the lowest mounting point of door mechanism for level may not be less than 2164mm. The height of door mechanism guide rail center above the reference point is 1900mm, the distance of door mechanism mounting point to the reference point in lateral direction of car body is 1900mm.			<input type="checkbox"/>
4	Check of door mechanism	The installed mechanism is level.			<input type="checkbox"/>
5	Installation of door mechanism	Mounting bolts are tightened to 45 N.m.; Door socket center-low head cap screws are tightened to 10 N.m. After adjustment, thread locker L1243 is applied on the connecting bolts for fixing purpose.			<input type="checkbox"/>
6	Locking point	Locking point is well defined and regular without any gaps. (For the application standard, refer to document 客装通 011.)			<input type="checkbox"/>
7	Installation of hair brush	The upper sealing brush is affixed properly. The lower surface of brush assembly is flush with that of car body mounting seat.			<input type="checkbox"/>
8	Check of spacers	Spacers are applied properly and securely.			<input type="checkbox"/>
9	Surface quality inspection	There is no scuffing or damage.			<input type="checkbox"/>
10	Serial No. of door mechanism	1	2	3	
		4	5	6	
<b>Final inspection conclusion</b>		<input type="checkbox"/> The process is up to standard, allow change to the next process. <input type="checkbox"/> The process is conditionally up to standard, allow change to the next process.			
Signature of leading official of operators		Signature and stamp of inspector			
Date		Date			
Prepared by: Wang Quan		Checked by: Quan Dongji		Approved by: Liu Zongmin	
Date: 2011-08-25		Date: 2011-9-2		Date: 2011-9-16	

QM-A-7035-04-3035 A


Page 1 of 1

Attachment to Tab I.4, QA Plan

Sample Documents

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Document No. : BG-OB5100-003-2009

 长春轨道客车股份有限公司 中国北车 CHANGCHUN RAILWAY VEHICLES CO., LTD.	<b>PURCHASED PART NONCONFORMITY REPORT</b>	<b>Project Description:</b> A-3003/CRH380BL High-speed EMU Manufacturing
NCR NO.: NCR-A-3003-PA-1139/6000004427		
<b>Supplier/Description:</b> 70002122/Merak Jinxin Air Conditioning Systems (Wuxi) Co., Ltd.		
<b>Nonconformity item:</b> 225996 saloon air conditioning unit		
<b>Drawing No:</b> CCD00000028714_A		
<b>Quantity and Series Number:</b> 400.000/ Purchase order: 4900061410 project		
<b>Train-Set No:</b>	<b>Vehicle No.:</b>	
<b>Description of Nonconformity</b>		
2010.08.07 14:09:13 Li Fenghua, Quality Management Office of the Quality Assurance Department (CRC13353) SAP: 225996 air conditioning unit side cover plate; quantity of 24. The problems of the part are as follows: 1. The positions of the earth blocks are not uniform; 2. Some internal and external rivets are spread with glue but some are not; 3. The cover plate end has a gap; 4. Some welded reinforced rib ends are opened and some are closed; 5. Some sponge rubber strips are separated. (See the appendix)		
<b>Record of Responses</b>		
2010.08.07 14:10:41 Li Fenghua, Quality Management Office of the Quality Assurance Department (CRC13353) 2 blocks (to be returned) for the assembly procedure are included in the 2nd batch is inspected.		
2010.08.09 13:46:43 Li Fenghua, Quality Management Office of the Quality Assurance Department (CRC13353) The quantity is changed from 24 to 32 (the 8 blocks are reserved on the workshop site).		
2010.09.01 08:15:18 Lin Ge, General Assets Purchase Office of the Purchasing Department (CRC19002) The supplier has completed the rectification and please close the notice.		
2010.09.19 17:53:20 Lin Ge, General Assets Purchase Office of the Purchasing Department (CRC19002) This NCR includes the quality problem of the 1st train and all have been handled now and please confirm the subsequent rectification, Ms. Cao.		
2010.10.05 14:50:35 Du Chao (DCC10001) After the supplier's rectification of the 1st train, the subsequent supply should be the qualified products according to the requirements of Cao Yanhua.		
2010.10.22 14:38:34 Liu Mingyan, Quality Management Office of the Quality Assurance Department (CRC13302) It is required that the subsequent products should be supplied by the supplier according to the documents issued in the design.		
2010.10.23 07:51:43 Wang Enhui, No. 2 Quality Inspection Office of the Quality Assurance Department (CRC02952), approved, and please close notice.		
<b>Customer or Customer Deputy decision</b>		
<b>Signature:</b>		
<b>Date:</b>		
Is it necessary to raise a corrective action? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
<b>Corrective Action No.:</b>		
<b>Quality team signature/stamp:</b> Liu Mingyan CRC13302 <b>Date:</b> 2010.10.22		
<b>Follow up and validation</b>		
<b>Validated by signature/stamp:</b> Li Fenghua CRC13353 <b>Date:</b> 2010.10.23		

Attachment to Tab I.4, QA Plan

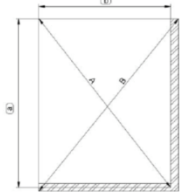
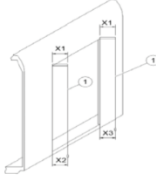
Sample Documents

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Work Process Sheet

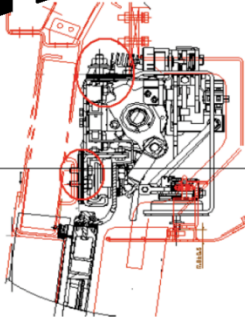
CCY-061-029-2008


Document Name	Technical Specification of Saloon Side Door Installation	Document No.	SSDI 692 (DK136-138) -007
Procedure No.	Picture/Sketch	Operating Instruction	Man Hour (Minute)
10		10. Inspect the dimensions of the steel-structure doorway before the installation: 10.1 (1) Height a: 1960.5 (-2, +3) mm; (2) Width b: 1900 (0, +4) mm; (3) Diagonal difference: $-1 \leq A-B \leq 1$ mm	
10		10.2 Use plumb line ① to measure the parallelism of the steel-structure doorway, $-3 \leq X2-X3 \leq 3$ mm.	
Change Log		Signed	Date
		Prepared	Zhang Yun
		Checked	Zhang Hongjun
		Page	7/23




Work Process Sheet

CCY-061-029-2008

Document Name	Technical Specification of Saloon Side Door Installation	Document No.	SSDI 692 (DK136-138) -007
Procedure No.	Picture/Sketch	Operating Instruction	Man Hour (Minute)
20		20. Installation of the door mechanism: 20.1 Use aluminum profile scale bar to inspect the flatness of the mechanism mounting seat. If it is not flat, take the lowest mounting seat as the reference (attention: the height of the lowest mounting seat from the floor surface should not be less than 2164mm), and use the sign pen to mark the thickness of the adjustment shim(s) to be added to the other mounting seats.	
20		20.2 Use lift truck to lift the mechanism to the mounting height and use bolts to preliminarily fix the door mechanism.	
Change Log		Signed	Date
		Prepared	Zhang Yun
		Checked	Zhang Hongjun
		Page	8/23

 长春轨道客车股份有限公司 中国北车 CHANGCHUN RAILWAY VEHICLES CO., LTD.	<b>Supplier Audit Management Process</b>		Document No.: SM-320BG-001V3.0	
	Date Revised: 2012-7-16	Revised by: Zhuo Xianzhi	Date approved: 2012-10-30	Approved by: Lu Xiwei

D. Description of Activities				
Activity	Objective of activity	When performed	Responsible person	Responsible department
QA-230-010 Planning of process audit	Collect information about quality problems from source inspection, incoming inspection and/or installation for any product used for construction of the vehicles, or to plan supplier process audit when supplier's performance is rated as level C or D.	In case of serious or mass quality problems in any supplied product	Quality engineer	Quality Assurance Dept.
QA-230-020 Preparation for process audit	Develop a plan for supplier process audit for the supplier to prepare relevant materials in advance as required by the plan.	After confirmation of quality problems	Supplier's quality leader	Supplier
QA-230-030 Kickoff meeting	Specify the reason(s), purpose, schedule and agenda for the supplier process audit.	Before starting supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-040 Document audit	Audit whether the technical and quality documents related to the supplier's product are ready and adequate and whether the field record is complete in order to verify the effectiveness of the documents. Any nonconformity problems shall be recorded.	During supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-050 Field audit	Audit supplier's product realization process in order to verify whether or not its quality assurance capability and execution is adequate and effective to meet project requirements. Any nonconformity problems shall be recorded.	During supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-060 Closing meeting	Collect and summarize problems found from the process audit and communicate them to the supplier clause by clause to confirm any nonconformity that requires rectification.	After supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-070 Issuing audit report	Issue the supplier process audit report and determine nonconformity items.	On completion of supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-080 Address open items	Identify any open items (nonconformities to be rectified) from the process audit and determine rectification actions.	On completion of supplier process audit	Quality engineer	Quality Assurance Dept.
QA-230-090 Assess impact to supplier qualification status	Decide on open items and process audit results and assess supplier's qualification to be suspended or not.	On completion of supplier process audit	Deputy chief quality engineer	Quality Assurance Dept.


 长春轨道客车股份有限公司 中国北车 CHANGCHUN RAILWAY VEHICLES CO., LTD.	<b>Supplier Audit Management Process</b>		Document No.: SM-320BG-001V3.0	
	Date Revised: 2012-7-16	Revised by: Zhuo Xianzhi	Date approved: 2012-10-30	Approved by: Lu Xiwei

QA-230-100 Rectification	Supplier shall submit specific rectification measures according to the nonconformity put forward in the process audit and carry out rectification as approved by the quality engineer.	On receiving the audit report	Supplier's person in charge of quality	Supplier
QA-230-110 Verification of rectification	Verify whether the supplier's rectification results in meeting the project requirements.	On completion of rectification by supplier	Quality engineer	Quality Assurance Dept.
QA-230-120 Archiving of materials	After satisfactory verification of the supplier's rectification, the quality engineer shall archive the supplier rectification verification materials and the process audit report.	On completion of verification of rectification	Quality engineer	Quality Assurance Dept.
<b>Miscellaneous provisions</b>				
Fundamental assumptions				
Notes for special situations				
Details of support management				
Competence management				
1. Name of post				
2. Authorization				
3. Certifications, qualifications and training				
Required report forms				
1. Process audit report				
2. Nonconformity rectification verification materials				



 长春轨道客车股份有限公司 CHANGCHUN RAILWAY VEHICLES CO., LTD.	<b>Corrective/Preventive Measures Management Process</b>		Document No.: SM-320BG-001V2.0	
	Date Issued: 2010-8-21	Checked by: Cai Ruiming	Date approved: 2010-8-28	Approved by: Lu Xiwei

D. Description of Activities				
Activity	Objective of activity	When performed	Responsible person	Responsible department
QA-1C0-010 Review information on nonconformity	Review information on nonconformity (received data or potential nonconformity is identified), to determine appropriate investigation and corrective and/or preventive measures to be carried out.	On receipt of nonconformity information	Person in charge	Unit responsible for subject
QA-1C0-020 Coordination	Obtain the cooperation and coordination of the unit responsible for the subject of the problem in investigating the nonconformity.	As required by the unit responsible for the subject	Person in charge of relevant unit	Relevant unit
QA-1C0-030 Root cause analysis and analysis meeting	Conduct investigation and analysis to determine and verify the root cause of the problem. Involve relevant departments and personnel as necessary; when necessary, a problem analysis meeting may be held to facilitate interdepartmental analysis of the nonconformity's causes.	Within 3 days after receiving nonconformity information	Person in charge	Unit responsible for subject
QA-1C0-040 Problem analysis meeting	Hold problem analysis meeting with the participation of the unit responsible for the subject of the problem and other relevant departments to analyze the cause(s) of the problem.	As required by responsible unit	Person in charge	Relevant unit
QA-1C0-050 Establish corrective and/or preventive measures	Evaluate the need for corrective and preventive measures based on the nonconformity and causes identified; consider the necessity and feasibility of proposed corrective and preventive measures, and risk, balancing benefit and cost and make decision of which corrective and preventive measures should be taken.	Within 2 working days of receiving nonconformity information or problem analysis results	Person in charge	Unit responsible for subject
QA-1C0-060 Audit by department chief	Audit the accuracy of cause analysis and effectiveness of corrective and preventive measures.	Within 3 working days of receiving corrective/preventive measures	Department chief or designee	Unit responsible for subject
QA-1C0-070 Acceptability of corrective/preventive measures	Determine whether the corrective/preventive measures are acceptable as checked by the department chief audit	On conclusion of department chief audit	Person in charge of relevant unit	Unit responsible for subject
QA-1C0-080 Approval of company leader	Determine whether corrective/preventive measures used to be acceptable as checked by the company-level chief for approval.	Within 3 working days of receiving corrective/preventive measures	Person in charge of relevant unit	Unit responsible for subject
QA-1C0-090	Approve corrective/preventive measures of the unit or	Within 3 working days of	Person in	Unit

 长春轨道客车股份有限公司 CHANGCHUN RAILWAY VEHICLES CO., LTD.	<b>Corrective/Preventive Measures Management Process</b>		Document No.: SM-320BG-001V2.0	
	Date Issued: 2010-8-21	Checked by: Cai Ruiming	Date approved: 2010-8-28	Approved by: Lu Xiwei

Approval	company-level chief if determined to be needed,	receiving corrective/preventive measures	charge of relevant unit	responsible for subject
QA-1C0-100 Organize implementation	Organize relevant departments to implement corrective and/or preventive measures.	According to the corrective and preventive measures	Person in charge of relevant unit	Unit responsible for subject
QA-1C0-110 Coordination	Obtain the cooperation and coordination of the unit responsible for the problem in order to implement the corrective and/or preventive measures.	As required by corrective/preventive measures	Person in charge of relevant unit	Relevant unit
QA-1C0-120 Implement corrective/preventive measures	Implement the specified corrective and preventive measures.	As required by corrective/preventive measures	Person in charge	Relevant unit
QA-1C0-130 Verify implementation of corrective/preventive measures	Verify that corrective and preventive measures have been implemented as specified.	As required by corrective/preventive measures	Person in charge	Unit responsible for subject
QA-1C0-140 Acceptability of implementation of corrective/preventive measures	Determine whether implementation of corrective and/or preventive measures was effective or additional actions are needed.	According to the conclusion of verification.	Person in charge of relevant unit	Unit responsible for subject

<b>Miscellaneous provisions</b>	
Fundamental assumptions	
Notes for special situations	
Details of support management	Corrective and Preventive Measures Management Specification
Competence management	1. Name of post 2. Authorization 3. Certifications, qualifications and training
Required report forms	

Attachment to Tab I.4, QA Plan

Sample Documents

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## 5 M/WBE PARTICIPATION

### 5.1 COMPLETED M/WBE UTILIZATION FORM

Tab I.5 (a) Completed M/WBE Utilization Form

*The Offeror shall provide a completed M/WBE Utilization Form indicating the percentage of the Base Award Price and Total Proposal Price to be supplied by qualified M/WBEs under the Contract. For purposes of this requirement, the MBTA will only accept M/WBEs that are certified, at the time of proposal opening by the Massachusetts Supplier Diversity Office formerly known as the State Office of Minority and Women Business Assistance.*

## M/WBE UTILIZATION FORM SUPPLEMENTARY DOCUMENT

As stated on our M/WBE Utilization form, CNR MA Corporation ("CNR MA") is committed to contract 16% of the Total Base Award Price and 15% of the Total Proposal Price to be performed or supplied by certified M/WBE firms for this project. We will continue our collaboration with the MBTA Outreach, Supplier Diversity & Development Office, and the Massachusetts Supplier Diversity Office (SDO).

Our Participation Plan, which is attached, attests to the actions successfully taken, which have already allowed us to secure 7.79% of the Base Award Price and 8.88% of Total Proposal Price for M/WBEs as attested to by the attached Letters of Intent. Additional suppliers have been contacted, and we are currently under discussion and clarification on the detailed Scope of Work with these firms. Until finalization of design and workscope, it would be premature to engage in signed Letters of Intent. We indicate in our proposal the efforts that shall continue to ensure this commitment. We repeat part of Attachment B, which is provided in our Participation Plan, to demonstrate the areas where we are certain that these commitments can be fulfilled.

**CNR MA has calculated and projects the following percentages of M/WBE content for the base order and total proposal.**

Content	Base Award	Total Proposal
<b>Secured Content</b>		
Vehicle Components		
Secured through agreements and through expectations from primary vendor submittals.		
Trucking		
Technical Consulting		
<b>Total Secured Content</b>	<b>7.79%</b>	<b>8.88%</b>
<b>Unsecured but Anticipated Contracts</b>		
General Construction & Facility Setup		
Human Resources		
Visa Applications		
Vehicle Components		
Metal Fabrication		
	<b>8.21%</b>	<b>6.12%</b>
<b>Total Secured and Unsecured Content*</b>	<b>16.00%</b>	<b>15.00%</b>

We will continue to work with potential suppliers that will allow us to meet our M/WBE goal. **Additional outreach programs, working with sub-suppliers, and the efforts of our M/WBE consultants allow us to believe these goals to be both credible and attainable.** Our analysis of our facility setup and investment in our manufacturing operation will allow us to reach this M/WBE goal.

## 5.2 M/WBE PARTICIPATION SCHEDULE

Tab I.5 (b) M/WBE Participation Schedule

*The Offeror shall provide an M/WBE Participation Schedule identifying those qualified M/WBEs with whom the Offeror intends to contract for the performance of the portions of the work under the Contract, the work to be performed by each qualified M/WBE, a proposed timetable for the performance or delivery of the Contract item, and other information as required by the M/WBE Participation Schedule form annexed to this Section. No work shall be included in the Schedule that the Offeror has reason to believe the listed M/WBE will subcontract, at any tier, to other than another M/WBE.*

Name of Supplier or Subcontractor and Category (Indicate MBE or WBE)	Address and Contact Information	Description and Type of Service to be Performed or Material to be Supplied	Beginning / Duration	Percent of M/WBE Participation
Raul V.BRAVO + ASSOCIATES, INC MBE	1889 Preston White Drive, Suite 202, Reston VA, 20191 Claudio R. Bravo Tel:703-326-9092	Technical Support	RFP/ contract execution	Base Contract:0.50% Total Proposal:0.39%
LydRiv Communications WBE	11 Hallet Street, Dorchester, Ma,02122 Lydia M. Rivera , Principal Tel: 617-851-1095	MWBE outreach consultant	RFP/NTP	Base Contract:0.01% Total Proposal:0.01%
RL Controls WBE	10-V Gill St. Woburn, MA 01801 Lena Walsh Principal Tel:781-932-3349	Passenger Information System	Contract execution	Base Contract:2.34% Total Proposal:2.97%
RL Controls WBE	10-V Gill St. Woburn MA 01801 Lena Walsh Principal Tel:781-932-3349	Electrical cabinet assembly; Wire Harness	Contract execution	Base Contract:1.33% Total Proposal:1.33%
UTCRA, Inc. WBE	501 Highland Avenue, Morton, PA 19070 Ms. Betty A. Scott Tel: 610-983-0102	Wheels and Axle assembly	Contract execution	Base Contract 1.5:% Total Proposal: 2.0%
MRI WBE	228 East 45 <sup>th</sup> Street, Suite 1801 NewYork,NY 10017 Ms.Gayle Bernstein Tel: (212) 867-9600	Inland and sea transportation	Contract execution	Base Contract:2.11% Total Proposal:2.18%



Unsecured but Anticipated Contractors		General Consutruction, Facility Setup, Human Reeources, Visa Applications, Vehicle Components, Metal Fabircation	Contract Execution	Base Contract: 8.21% Total Proposal: 6.12%
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Proposer name: CNR MA Corporation

Name of Contact Person: Mr. Dai Iwama

Telephone: 212-704-6776

### 5.3 M/WBE LETTER OF INTENT AND CERTIFICATION FORMS

Tab I.5 (c) M/WBE Letter of Intent

*The Offeror shall provide a completed M/WBE Letter of Intent from each M/WBE listed in the M/WBE Participation Schedule using the form annexed to this Section, and a copy of the most recent certification letter or other documentation establishing the M/WBE certification of each M/WBE listed on the M/WBE Participation Schedule, and an M/WBE Affidavit executed by each M/WBE listed in the M/WBE Participation Schedule stating that there has not been any change in its status since the date of its last certification.*

The M/WBE Letter of Intent and Certification Forms are included in Section 6 Appendix, as per Addendum No. 1.

### 5.4 MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES (M/WBE) PARTICIPATION PLAN

Tab I.5 (d) Ensuring Overall Compliance

*The Offeror shall provide a narrative explaining how the Offeror intends to ensure overall compliance with the MBTA's policy of promoting equity and opportunity for M/WBEs and the good faith efforts it has made to obtain M/WBE participation. The Offeror shall include in the narrative the strategies it has and will use to obtain subcontractors and suppliers, including but not limited to documented communication with the Authority's Office of Diversity and Civil Rights, use of information concerning M/WBE subcontracting opportunities provided by the MBTA during the pre-proposal conference and/or through other means, the Offeror's solicitations to obtain M/WBE involvement in general circulation media, trade association publications, minority-focused media and other reasonable and available means within sufficient time to allow M/WBEs to respond to the solicitation, written notification to M/WBEs encouraging participation in the proposed Contract, and efforts made to identify specific portions of the work that might be performed by M/WBEs. At a minimum, the Offerors should provide the names, addresses, telephone numbers of M/WBEs that were contacted, a description of the information provided to targeted M/WBEs regarding RFP's work requirements, and efforts made to assist M/WBEs contacted in obtaining bonding or insurance required by the Offeror or by the Authority. Offerors are referred 49 to CFR Part 26 and OSD Construction Reform Program, Attachment C (Municipal Contracts State-Assisted Building Projects), Section A, 4-10 for additional guidance concerning actions that are commonly considered good faith efforts to obtain M/WBE participation.*

#### 5.4.1 Overview and Plan Type

CNR is pleased to submit this Minority and Women Owned Business Enterprises (M/WBE) Participation Plan in accordance with the Request for Proposal No. CAP 27-10 for the MBTA New Orange and Red Line Vehicles. CNR has prepared this plan to provide M/WBE business participation to meet the percentage attested to on our M/WBE Utilization Certificate. CNR is committed in its management plans to develop increased participation for M/WBE companies in all levels of its procurement practices and policies.

While this plan has been developed to respond to MBTA's formal RFP requirements, it has been established as an ongoing plan adopted by CNR to develop and expand the use of M/WBE firms beyond the period of this contract. As CNR will be establishing a significant facility in Massachusetts and this will be the only manufacturing facility CNR is planning in the United States, we envision this as an opportunity to expand employment opportunities and maximize M/WBE work within the State of Massachusetts. This M/WBE utilization plan has been designed to remain a dynamic process to enhance and expand prospects for M/WBE firms to grow to become partners with CNR. The plan creates mutual opportunities for CNR to expand its vendor base, while allowing for industry growth, expansion into new markets, and emergence of new companies with new talents.

**CNR's M/WBE plan commits to grow M/WBE participation beyond this contract.**

#### **5.4.2 Goals**

CNR has established this M/WBE Plan to ensure that the company will develop and implement business practices and procedures to foster the use of M/WBE businesses in all of our contractual dealings. It is our goal that M/WBE businesses will be provided the maximum opportunities to participate in all contracts and awards. This will be accomplished by folding M/WBE initiatives into our normal business practices in obtaining bids or quotes for orders at all levels of our operation. We will further extend these methods to include outreach programs to M/WBE firms, establish mentoring programs, and look to subcontract work that would normally be performed in-house to reach the minority goals established either directly by the company or through contractual obligations.

CNR is giving the highest priority to M/WBE businesses with which we have attached the Letters of Intent and estimated contractual value. We have also developed relationships with several firms with whom we are prepared to contract for this program, which could not be listed at this stage of the project. We do offer their amount of content in what we have determined to be our committed M/WBE content. Understanding that Letters of Intent cannot be issued with many of the firms with whom we have had contact at the pre-award stage due to the fact that design is not finalized to levels to provide detailed opportunities for bid, we have, nonetheless, extended opportunities with M/WBEs to participate in the design process to afford equal opportunities for award in many of the areas requiring contracted services.

CNR continues to work with suppliers to meet and potentially exceed our goal of 16%, and discussions are continuing with suppliers providing them guidance and clarification on the detailed scopes of work. We are working directly with M/WBE firms to provide a clear understanding of scope of work, expectations, and offering assistance, both technically and commercially, to ensure participation. CNR continues to work throughout the proposal and bid process with potential suppliers that will allow us to meet our M/WBE goal. **Additional outreach programs, working with sub-suppliers, and the ongoing efforts of our M/WBE consultants allow us to believe these goals to be both credible and attainable.** Additionally, our analysis of our facility setup and our significant investment in our manufacturing operation will allow us to reach this M/WBE goal.

**Results to date indicate CNR CAN MEET ITS M/WBE GOAL OF 16%!**

#### 5.4.2.1 Methods Used to Develop the Subcontracting Goals

Committed to maximizing utilization of Disadvantaged, Minority and Women Owned Business Enterprises (DBE/MBE/WBE) for MBTA's Orange and Red Line Car Procurement, CNR initiated an aggressive outreach effort to DBE/MBE/WBE businesses within Massachusetts prior to RFP submittal to share various subcontracting opportunities available to them pertaining to this procurement. CNR listed the following subcontractor/vendor opportunities:

<b>Construction:</b>	Facility Design, General Construction, Electrical Contractor, Plumbing, Painting, Irrigation Systems
<b>Material Supply:</b>	Rolling Stock, Electrical/Mechanical/Fabricated components, Manufacturing Equipment
<b>Services:</b>	Technical/Construction/Environmental Consultant Services, Labor Management Services, Transportation, Cleaning Services, Safety Management Services

Utilizing this format, CNR introduced itself to the M/WBE community and clarified the potential opportunities and methods for doing business together. CNR has established a baseline for possible work that can be performed on this contract by certified firms. Our goal has been established following discussions with major suppliers, who determine a significant portion of our capability to provide M/WBE content, along with our own activities to promote understanding of possible opportunities within the certified vendor community, discussions with several of these suppliers, and discussions with the Massachusetts Office of Diversity. Major suppliers provide systems and materials to the railcar builder that establishes much of the total costs for the procurement. CNR is working with these suppliers to expand their own M/WBE base of Massachusetts certified sub-suppliers and increase their utilization of these companies.

CNR performed the following additional activities in developing its plan and implementing it prior to bid submittal:

- Reviewed contract specifications for definitions and direction;
- Reviewed 49 CFR Part 26 for guidance in establishing its plan and for methods in expanding its search efforts;
- Reviewed MBTA website and Massachusetts SOMWBA websites for M/WBE information;
- Contacted the Massachusetts Office of Diversity for clarification and assistance;
- Solicited assistance from certified minorities and consulting firms;
- Contracted with Raul V. Bravo + Associates, Inc. to assist in preparation of goals, assist CNR to develop their plan for participation, assist in defining parts and materials that could be successfully used in set-aside programs, and assist in contacting M/WBE firms;
- Contracted with Lydia M. Rivera of LydRiv Communications to assist with the development of the workshops, coordination of workshop activities, and overall M/WBE outreach;
- Worked with primary rail component subcontractors to develop input and information regarding M/WBE firms.

CNR engaged professional U.S. consulting firms to develop its M/WBE program.

#### 5.4.2.2 Methods Used to Identify Potential Sources



To engage the interest of businesses, two four-hour MBE/WBE workshops were held – one in Springfield on Tuesday, March 18 at the Springfield Marriott, and another in Quincy on Wednesday, March 19 at the Quincy Marriott.

**CNR solicited 873 M/WBE companies for participation in this project.**

Advance outreach efforts included:

- Coordination with the MBTA Outreach, Supplier Diversity & Development Office to solicit their database of DBE/MBE/WBE businesses consisting of 873 companies.
- Mail and email to each business a personal letter detailing CNR goal to pursue the Red and Orange Line Procurement, and further information of two upcoming workshops scheduled to share subcontracting opportunities. (A listing of companies contacted is too extensive to include herein, but would be provided upon request.)
- Partnered with the Massachusetts Office of Supplier Diversity (SDO) and the following minority organizations to share workshop(s) information via their member database:
  - ✓ Massachusetts Small Business Association (SBA)
  - ✓ Massachusetts Minority Contractors' Association
  - ✓ Boston Worker's Alliance
  - ✓ Urban League of Eastern Massachusetts
  - ✓ Center for Women & Enterprise

CNR further identified potential sources for subcontracting opportunities by:

- Reviewing source lists from major suppliers
- Consulting SOMWBA, as noted above, along with M/WBE websites
- Meetings with and visiting potential M/WBE suppliers who could qualify to work on this proposal prior to the workshops
- Sending direct email solicitation to various SOMWBA certified firms requesting their interest in working on this proposal prior to our workshop to initiate contract possibilities as early as possible
- Working with M/WBE certified firms in locating acceptable assembly manufacturing locations
- Tracking vendor referrals
- Performing Internet searches
- Consulting with the Commerce Department's Small Business Utilization Specialist
- Consulting the National Minority Supplier Development Council Web Site
- Contacting Small Business Trade Associations
- Using M/WBE directories from other transit authorities and census information

To maximize workshop participation in Western Massachusetts and Quincy, the workshops were advertised in the following newspapers/publications:

Publication	Period Advertised
Boston Globe	Wednesday, March 12, 2014
Boston Herald	Wednesday, March 12, 2014
Bay State Banner (Minority)	Thursday, March 13, 2014
Patriot Ledger	Saturday, March 15, 2014
Holyoke Sun	Week of March 10, 2014
Wilbraham Hamden Times	Week of March 10, 2014
Chicopee Register	Week of March 10, 2014
Agawam Advertiser	Week of March 10, 2014
Hadley Town Reminder	Week of March 10, 2014
Springfield Republican	Thursday, March 13, 2014
Westfield News	Wednesday, March 12, 2014

#### 5.4.2.3 Workshop Overview

On Tuesday, March 18, an M/WBE Workshop was held at the Springfield Marriott Hotel attended by 22 individuals representing 22 businesses.

**CNR already conducted two successful M/WBE Workshops in Massachusetts.**

On Wednesday, March 19, an M/WBE Workshop was held at the Quincy Marriott Hotel attended by 50 individuals representing 45 businesses.

#### **Total Workshop(s) Attendance: 72 individuals from 67 businesses**

The businesses who attended the M/WBE workshops participated in the following activities:

- Registration including sharing of personal information, address, phone, email
- Continental Breakfast
- Business Profile form
- Video Introduction of CNR
- PowerPoint Introduction of CNR
- M/WBE Outreach Plan
- Overview of Business Profile form
- Question & Answer Period
- Lunch
- Access to three (3) sub-groups staffed by CNR representatives for work-specific questions pertaining to Rolling Stock Subcontracting, Services, and Facility and Construction.

Thirteen (13) people who were unable to attend either workshop requested further information. These individuals were added to the contact list database as well bringing the total number of contacts from the workshops to 80.

Another 19 companies were contacted after the workshops, and we are currently in discussions with these companies.

In total as of this date, ninety-nine (99) businesses are included in CNR's M/WBE contact database from this outreach. (See Attachment A for the list of the 99 suppliers.)

#### 5.4.2.4 Post Workshop Communication

To ensure M/WBE businesses remain informed of potential subcontracting opportunities relating to the Orange and Red Line Car Procurement, CNR is doing and will do the following:

- Create, maintain, and add to M/WBE contact list data base;
- Provide periodic updates to subcontractors relating to work opportunities;
- Respond to subcontractor inquiries in timely manner via phone, email, or one on one;
- Partner with MBTA Outreach, Supplier Diversity & Development Office to create processes to further identify and promote M/WBE participation;
- Continue relationship with minority organizations for outreach to businesses yet to be informed of subcontracting opportunities;
- Coordinate additional informational workshops as necessary.

#### 5.4.3 Minority/Women Owned Business Enterprise Liaison Officer

We have created a new position in our organization for a dedicated Minority/Women Owned Business Enterprise Liaison Officer. This person will be directly involved in all aspects of M/WBE performance. The M/WBE Officer will have direct, independent access to the Chief Executive Officer of the company on all matters related to M/WBE programs. Our workshops have been attended by senior procurement and contracts personnel, who have begun the process of working with these firms. They have been complemented by the use of consultants who have brought new firms into the conversation and acted as an intermediary to provide needed direction for expanding opportunities for participation.

A CNR Liaison Officer will be the point of contact for all M/WBE matters.

Through the use of these personnel, CNR will expand the use of M/WBEs in its purchases and contracts. As we have done in our workshops, we will invite certified M/WBEs to visit our facility, once it is established, to review the products we are purchasing and manufacturing to explore contracting opportunities. We will also utilize the various directories of certified businesses, both locally and nationally, to develop and expand our vendor data base.

We recognize that the development of a successful program requires more than training and naming a few individuals. Staff training will occur in Procurement and to some degree in Engineering to allow for a better understanding of possible vendor capabilities and equipment. Most design engineering for manufacturing completed in-house is developed around equipment and processes with which we have familiarity. We recognize that understanding the skills and equipment capabilities of other suppliers is necessary in obtaining competitive bids.

We recognize that working with our major systems suppliers is a necessary and requisite part of establishing and meeting our M/WBE goal. The Liaison Officer will also:

- Work directly with MBTA in identifying, developing and expanding the base of certified M/WBE businesses as it relates to the passenger rail industry;
- Gather and report statistical data and other information as required by MBTA;
- Review third party contracts and purchase requisitions for compliance with this program;

CNR requested major U.S. suppliers to maximize use of M/WBE sub-suppliers.

- Ensure that bid notices and requests for proposals are available to M/WBE's in a timely manner;
- Identify contracts and procurements so that M/WBE goals are included in solicitations;
- Analyze our progress toward attainment and identify ways to improve progress;
- Participate in pre-bid meetings;
- Provide M/WBEs with information and assistance in preparing bids, obtaining bonding and insurance;
- Plan and participate in M/WBE training seminars;
- Maintain the company's updated directory on certified M/WBEs;
- Maintain and update a listing of qualified M/WBEs that can be solicited for construction equipment, services and supplies;
- Maintain a list of minority and women business focused publications that may be utilized to solicit M/WBEs;
- Coordinate additional ongoing M/WBE workshops and outreach events;
- Continue relationship building with minority organizations to assist with M/WBE recruitment and participation including National Association of Women in Construction (NAWIC) and Mass Minority Contractors Association (MMCA);
- Engage collaborative approaches through one-on-one meetings with M/WBE's to identify and evaluate project opportunities;
- Provide manufacturing floor space and logistics support to enhance M/WBEs participation through mentoring and training sessions whenever feasible.

#### **5.4.4 Equitable Opportunity**

CNR will take the following actions to ensure that M/WBE concerns will have an equitable opportunity to compete for subcontracts. These efforts include, but are not limited to, the following activities:

##### **Outreach Efforts to Obtain Sources**

- Utilize the SOMWBA database to contact potential and probable suppliers;
- Contacting minority and small business trade associations;
- Contacting business development organizations and local chambers of commerce;
- Attending M/WBE procurement conferences and trade fairs for rail and transit agencies;
- Requesting sources from the Small Business Administration's (SBA) CCR Small Business Site and other Federal agency resources;
- Conducting market surveys to identify new sources.

##### **Internal Efforts to Guide and Encourage Purchasing Personnel**

- Conducting workshops, seminars, and training programs;
- Establishing, maintaining, and utilizing M/WBE and source lists, guides, and other data for soliciting subcontractors;
- Monitoring activities to evaluate compliance with the subcontracting plan;



- Establish and chair an M/WBE Advisory Committee to expand opportunities for M/WBE involvement.

#### **5.4.5 Flow-Down Clause**

CNR agrees to include the provisions under FAR 52.219-8, "Utilization of Small Business Concerns," in all major subcontracts, which will require suppliers to make timely payments to M/WBEs and provide equal opportunities for contract awards.

### **5.5 PRESERVE AND ENHANCE M/WBE PARTICIPATION**

**Tab I.5 (e) Preserve and Enhance M/WBE Participation**

*The Offeror shall provide a narrative explaining how during performance of the Contract it will maintain continued efforts to preserve and enhance M/WBE participation. Included within this narrative should be a description as to how the Offeror will interface with MBTA for outreach and assistance generally and with respect to the specific issues below. The narrative should describe how the Offeror will abide by the monitoring and reporting requirements in Section C7.16 of the Contract. Moreover, the narrative should describe dispute resolution procedures the Offeror will institute under its subcontracts with M/WBEs to encourage amicable resolution of disputes and continued performance by the M/WBEs. Finally, the narrative should describe procedures and guidelines for the termination of M/WBEs as well as for the identification and selection of substitutes.*

Based on the duties of the Liaison Officer and the work outlined to be done directly with MBTA, CNR will continue to preserve and expand its efforts in developing M/WBEs in all contract work. As CNR will be establishing their manufacturing operation in the United States in Massachusetts, we are committed to expanding the role of all local and M/WBE businesses in the State. We are further committed to expand the capabilities and roles of these businesses as they relate to our scope of supply. It is equally our need to have an experienced supplier base to draw on as this and other contracts develop.

#### **5.5.1 Reporting and Cooperation**

CNR gives assurance of cooperation in any studies or surveys that may be required including:

- Submission of periodic reports that show compliance with the subcontracting plan;
- Submission of quarterly reports indicating funds expended with M/WBE's during the quarter and cumulative contract values with comparisons to goals;
- Maintenance of documents concerning solicitations, efforts to expand opportunities for M/WBE's, and award data.

#### **5.5.2 Recordkeeping**

CNR will maintain the following types of records to demonstrate the procedures adopted to comply with the requirements and goals in the sub-contracting plan.

- Records to support other outreach efforts, e.g. contacts with minority and small business trade associations and attendance at small and minority business procurement conferences and trade fairs;

- Records to support internal guidance and encouragement provided to buyers through workshops, seminars, training programs, and incentive awards;
- Monitoring CNR performance to evaluate compliance with the program and requirements.

### **5.5.3 Timely Payments to Subcontractors**

CNR uses established procedures to ensure timely payments of amounts due pursuant to the terms of subcontracts with all small business concerns. Specifically, CNR follows standard payment practices and extends accelerated terms on a case-by-case basis to subcontractors requiring accelerated terms or assistance. Understanding the cash flow needs that are often unique to M/WBE firms, CNR will take actions to ensure participation, survival and expansion of opportunities to these firms.

In our workshops, we became keenly aware of the difficulties associated with contracts that extend over a period of years and start-up requirements that may not be consistent with adequate cash flow for new businesses entering this market. CNR will take appropriate actions to offset these difficulties wherever practical.

### **5.5.4 Termination of M/WBE Contractor Disputes Clauses**

CNR agrees that it will not terminate an M/WBE contractor for convenience. Should a termination of contract be required either because of default of the M/WBE or the M/WBE business suspending or closing its operations, CNR will make every good faith effort to find another M/WBE subcontractor to substitute for the original M/WBE and immediately notify MBTA in writing of its intent to terminate and its efforts to replace the original M/WBE.

CNR will provide language in its contracts regarding the amicable resolution of disputes with M/WBE firms in its own contracts with M/WBE firms and foster similar terms in the contracts of its suppliers.

### **5.5.5 Proposed Small Business Subcontracting Agreements**

CNR has engaged and has teaming agreements with industry experts that have prior M/WBE contracting experience. It is our intention to continue to use these subcontractors for specific areas of the solicitation.

CNR M/WBE subcontracting goals for both products and services are detailed in Attachment B. These are intended to serve as areas under discussion with capable, certified firms. They are included as part of our evaluation with regard to committed numbers and serve to support the establishment, integrity and validity of our stated goal.

### **5.5.6 Efforts Made to Assist M/WBES**

The CNR team's proactive approach to identify and secure M/WBE participation through "Pre-Award" outreach workshops has proven successful. The CNR team has fostered relationships with potential suppliers promoting active dialogue and sharing of necessary information to ensure suppliers' understanding of participation requirements. Through these efforts, CNR has identified several M/WBE firms to participate in this contract with agreements already reached to secure more than 6% of the total Base Award Price of the 16% goal (as shown in the M/WBE Participation Schedule).

**CNR has a Checklist to maximize the success of M/WBE efforts.**

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CNR has developed the following checklist to evaluate the efforts it has made, and will continue to make, on behalf of M/WBEs. This checklist provides critical questions to ensure that M/WBE initiatives are sincere and effective for increasing M/WBE content.

### **CNR M/WBE PROGRAM CHECKLIST**

- 1) Have we solicited invitations to involve M/WBEs in this procurement?
- 2) Have we arranged solicitations, times for presentations of bids, quantities, and delivery in ways that facilitate participation by M/WBEs?
- 3) Have we selected portions of the work which can possibly be used for M/WBE participation?
- 4) Have we unbundled work assignments in a manner that might include greater M/WBE participation?
- 5) Have we provided adequate information to interested M/WBEs to quote?
- 6) Have we negotiated with M/WBEs in good faith?
- 7) Have we rejected M/WBEs as unqualified without sound reasons and without an investigation of their capabilities?
- 8) Have we made efforts to assist M/WBEs in technical and commercial matters where practical?
- 9) Have we provided services to help M/WBEs improve long-term development, increase opportunities to participate in a variety of kinds of work, handle increasingly significant projects, and achieve eventual self-sufficiency?
- 10) Have we assisted M/WBEs to develop their capability to utilize emerging technology and conduct business through electronic media?
- 11) Have we made effective use of the services and sources available to us to locate, recruit, and, if needed, replace M/WBEs?



**Attachment A**  
**Minority/Women Owned Business Enterprise (M/WBE)**  
**Outreach Workshop(s) Attendees**

	Company	Contact	Address	Phone	Email
1	Precision Engineering	Liora Stone	29 Industrial Drive PO Box 546 Uxbridge MA, 01569	508-278-5700	<a href="mailto:lstone@precisionengineering.com">lstone@precisionengineering.com</a>
2	PowerFab Inc.	Mary Robinson	P.O. Box130 Merrimack, NH 03054	603-424-3900	<a href="mailto:mrobinson@powerfab.com">mrobinson@powerfab.com</a> <a href="mailto:wmanning@powerfab.com">wmanning@powerfab.com</a>
3	DGF Industrial Innovations Group	John Makowski	PO Box 7532 Gilford, NH 03247	603-528-6591	<a href="mailto:jmakowski@dgfindustrial.com">jmakowski@dgfindustrial.com</a>
4	Sourcing Opportunities Inc.	Susan Ondovic	775 Hartford T-Pike Shrewsbury, MA 01545	508-845-3330	<a href="mailto:sue@sourcing-opps.com">sue@sourcing-opps.com</a>
5	Care Technology LLC	Chon Meng Wong	42 Moshassuck Road Lincoln, RI 02865	401-728-3235	<a href="mailto:wong@caretechnology.biz">wong@caretechnology.biz</a> <a href="mailto:bwong@caretechnology.biz">bwong@caretechnology.biz</a>
6	Resource Management Inc.	Larry Herman	281 Main St.Suite 5 Fitchburg, MA 01420	617-429-8135	<a href="mailto:Larry@rmi-solutions.com">Larry@rmi-solutions.com</a>
7	Fusion Services, LLC	Ann LeDang- Sheehan	550 Raymond Road Plymouth, MA 02360	617-433-7195	<a href="mailto:betterlife0127@gmail.com">betterlife0127@gmail.com</a>
8	Metrick Manufacturing Co	Marlene J. Metrick	142 Bedford Road Woburn, MA 01801	781-935-1331	<a href="mailto:marlene.metrick@metrickmfg.com">marlene.metrick@metrickmfg.com</a>
9	ABC Soils	Daniel Carvalho	111 Boston Post Road Sudbury, MA 01776	781-577-2770	<a href="mailto:dcarvalho@abcsoils.com">dcarvalho@abcsoils.com</a>
10	Chapman Construction Group, Inc.	Vicki Chapman	17 Jan Sebastian Drive Sandwich, MA 02563	508-989-7643	<a href="mailto:jrchapmanvicki@comcast.net">jrchapmanvicki@comcast.net</a>
11	Blue Sage Consulting, Inc.	Jeff Lovelace	PO Box 554 Hopkinton, MA 01748	423-435-1781	<a href="mailto:jeffreyl@bluesageconsulting.com">jeffreyl@bluesageconsulting.com</a>
12	Triunity Engineering & Management	Russ Deanson	60 Thoreau St, Suite 239 Concord, MA 01742	617-388-5036	<a href="mailto:russ.deason@triunityeng.com">russ.deason@triunityeng.com</a>
13	Green International Affiliates, Inc.	Marvin Miller	239 Littleton Road Westford, MA 01886	978-923-0400	<a href="mailto:mwmiller@greenintl.com">mwmiller@greenintl.com</a>
14	Pacific Drywall	Michael Ware	PO Box 255302 Dorchester, MA 02125	617-825-2371	<a href="mailto:michael.ware@pacificdrywall.org">michael.ware@pacificdrywall.org</a>
15	ATAP Mechanical Solutions	Roscoe Gay		617-548-7692	<a href="mailto:atap.ms1@gmail.com">atap.ms1@gmail.com</a>
16	Matrix New World	Kevin Scully	7 Wildwood Lane Nashua, NH 03060	978-835-1556	<a href="mailto:kscully@matrixnewworld.com">kscully@matrixnewworld.com</a>
17	Lamson Engineering Corp	Kin Lan	437 Cherry St Newton, MA 02465	617-558-0101	<a href="mailto:lamsoneng@msn.com">lamsoneng@msn.com</a>
18	Associated Subcontractors of Massachusetts	Scott Szycher	31 State Street, 4 <sup>th</sup> floor Boston, MA 02109	(617) 742- 3412	<a href="mailto:sszycher@associatedsubs.com">sszycher@associatedsubs.com</a>
19	Simos Consulting	Michele Simos	73 Chelsea Street, Suite 308, Boston MA 02129	781-844-4916	<a href="mailto:msimos@rcn.com">msimos@rcn.com</a>
20	Landstar Global Logistics	Maureen Powers	41 Highland Avenue Randolph, MA 02368	781-986-3832	<a href="mailto:maureen.power@landstarmail.com">maureen.power@landstarmail.com</a>
21	EnviroPike, LLC	Carolyn Matthews	79 E. Haynes Dr., Townsend, MA 01469	978-597-3163	<a href="mailto:enviropike@gmail.com">enviropike@gmail.com</a>
22	NIR Sales	Nanette Lula	PO Box 54 Kingston, MA 02364	508-275-0295	<a href="mailto:n.lula@yahoo.com">n.lula@yahoo.com</a>
23	CodeRed Business Solution	John Lewis	34 East Vanston Road Stoughton, MA 02072	314-241-4217	<a href="mailto:jlewis@coderedbs.com">jlewis@coderedbs.com</a>
24	Green Castle Business Solutions, LLC	Keith Castle	PO Box 160 Boston, MA 02131	617-307-4461	<a href="mailto:kcastle@greencastlebusiness.com">kcastle@greencastlebusiness.com</a>
25	Evermore Light and Power, Inc.	Ada Alfonso	143 Mishawum Road Woburn, MA 01801	(508)345- 5530	<a href="mailto:aalfonso@elpelec.com">aalfonso@elpelec.com</a>
26	MLD Services, Inc.	Marion L. Driscoll	40 Margaret Road Milton, MA 02186	617-529-4876	<a href="mailto:MLDservices@comcast.net">MLDservices@comcast.net</a>

	Company	Contact	Address	Phone	Email
27	Encore Images, Inc.	Paul Mervis	21 Lime Street Marblehead, MA 01945	781- 631- 4568	<a href="mailto:paul.mervis@encoreimages.com">paul.mervis@encoreimages.com</a>
28	Metro Equipment Corp.	Ann Sullivan	27 Dixwell Street Roxbury, MA 02119	617-524-0414	
29	Horizon Services Corporation	Theodore Hsu	250 Governor Street E. Hartford, CT 06108	860-291-9111	<a href="mailto:thsu@horizonsvcs.com">thsu@horizonsvcs.com</a>
30	Arch Professional Corp	Charles Bradley	260 Blue Hill Parkway Milton, MA 02186	617-538-1515	<a href="mailto:cwb@archprogrp.com">cwb@archprogrp.com</a>
31	RL Controls, LLC	Lena Walsh	10-V Gill Street Woburn, MA 01801	781-932-3349	<a href="mailto:lena@rlcontrols.com">lena@rlcontrols.com</a>
32	Interconnect Computer Cabling Services, Inc.	Michael Moreau	406 Libbey Industrial Parkway, Weymouth 02189	603-778-1950	<a href="mailto:mike@ccsiinc.com">mike@ccsiinc.com</a>
33	Parrish Painting Development & Construction Inc (PPDC)	John Lee	6 Fayston Street Dorchester, MA 02121	617-445-4920	<a href="mailto:parrislee@peoplepc.com">parrislee@peoplepc.com</a>
34	High Level Cleaning Services, Inc	Steven Encarnacion	1106 Main Street Brockton MA 02301	508-513-5382	<a href="mailto:highlevelcleaningservices@gmail.com">highlevelcleaningservices@gmail.com</a>
35	Albanese Brothers, Inc.	Marcella Albanese	28 Loon Hill Rd. Dracut, MA 01826	978-454-8850	<a href="mailto:marcella@albanesebros.com">marcella@albanesebros.com</a>
36	TFJ Management Services	Johnny Tamba	36 Mclellan St. Dorchester, MA 02121	617-230-4903	<a href="mailto:tfjmanagement@msn.com">tfjmanagement@msn.com</a>
37	Mass Construction & Management Inc	Maxime Charles	34 Cedar Street Mattapan, MA 02126	617-470-8028	<a href="mailto:mcharles@massconstruct.com">mcharles@massconstruct.com</a>
38	CDW Consultants, Inc.	Yee Cho	40 Speen Street Framingham, MA 01701	508-875-2657 x 18	<a href="mailto:ycho@cdwconsultants.com">ycho@cdwconsultants.com</a>
39	Adrian Name Plates	Madeline Albani	8 Pine Ridge Road Essex, MA 01929	978-768-7977	<a href="mailto:sales@adriannameplates.com">sales@adriannameplates.com</a>
40	General Safety Services, Corp	Nardine Bellew	80 Hudson Rd, Suite 100 Canton, MA 02021	781- 381- 2835	<a href="mailto:nbellew3@netscape.net">nbellew3@netscape.net</a>
41	Shekar & Associates, Inc.	Sharmila Bail	775 Pleasant Street Weymouth, MA 02129	781-337-8347	<a href="mailto:shekarco@verizon.net">shekarco@verizon.net</a>
42	Boyle Services	Terry Boyle	110 Watson Rd Belmont, MA 02478	617-484-3036	<a href="mailto:terryboyle@comcast.net">terryboyle@comcast.net</a>
43	SAK Environmental, LLC	Maureen Sakakeeny	231 Sutton Street N. Andover, MA 01845	978-688-7804	<a href="mailto:msakakeeny@sakenvironmental.com">msakakeeny@sakenvironmental.com</a>
44	Coastal Construction & Management Co.	Charles Lucner	P O Box 186 Mattapan MA 02126	617-990-6507	<a href="mailto:lcharles@coastalcm.com">lcharles@coastalcm.com</a>
45	Garg Consulting	Mark Neri	2096 A Silas Deane HW Rocky Hill, CT 06067	860-563-0582	<a href="mailto:mneri@gargengineering.com">mneri@gargengineering.com</a>
46	Merrimak Capital	Jeanne Gorham	27 Steeple Chase Circle Westford, MA 01886	415-475-7352	<a href="mailto:jgorham@merrimak.com">jgorham@merrimak.com</a>
47	Palmer Trailer Sales (PTS)	Guy Lucia	1158 Park Street Palmer, MA 01069	(413) 283- 3773	<a href="mailto:pts01069@yahoo.com">pts01069@yahoo.com</a>
48	Transitair	Dhruv Sharma	One William K Jackson Lane, Hornell NY 14843	607-324-7860	<a href="mailto:dsharma@transitairusa.com">dsharma@transitairusa.com</a>
49	ADG Enterprises	Diana Patterson	3772 Satellite Blvd, Suite 103 Duluth, GA 30096	770-662-8393	<a href="mailto:dpatterson@adgenterprises.net">dpatterson@adgenterprises.net</a>
50	Martinez Couch (MCA)	Ariel Martinez	1084 Cromwell Avenue Rocky Hill, CT 06067	860-436-4364	<a href="mailto:ariel.martinez@martinezcouch.com">ariel.martinez@martinezcouch.com</a>
51	Innovations	Winsor Cho	7 Fox Run Sturbridge, MA 01566	774-230-2920	<a href="mailto:winsorcho@gmail.com">winsorcho@gmail.com</a>
52	Vikam Associates, Inc.	Timothy Fountain	46 Whitmun Road Longmeadow, MA 01106	<a href="tel:413-567-8474">413-567-8474</a>	<a href="mailto:Tfoun36400@aol.com">Tfoun36400@aol.com</a>
53	Boulevard Machine	Susan Kasa	785 Page Boulevard Springfield, MA 01104	413-788-6466	<a href="mailto:skasa@boulevardmachine.com">skasa@boulevardmachine.com</a>
54	Creative Futures LLC	Lucie Lewis	P. O. Box 482 Longmeadow, MA 01028	866-818-9918	<a href="mailto:luciek@creativefuturesllc.com">luciek@creativefuturesllc.com</a>
55	Westcarb	Donald Smith	109A Mill Street Springfield, MA 01108	866-507-1576	<a href="mailto:dsmith@westcarb.com">dsmith@westcarb.com</a>

	Company	Contact	Address	Phone	Email
56	Walker International	Donald Laghezza	70 East Sunrise Highway Valley Stream, NY 11581	516-568-2080	<a href="mailto:dlaghezza@walkerscm.com">dlaghezza@walkerscm.com</a>
57	Atlantic Fasteners	John Kraus	49 Heywood Ave. Springfield, MA 01090	413-241-2225	<a href="mailto:jkraus@atlanticfasteners.com">jkraus@atlanticfasteners.com</a>
58	American Systems & Equipment Corp.	Mark Barowsky	66 Industry Ave. Springfield, MA 01104	413-739-8170	<a href="mailto:info@maerican-sys.com">info@maerican-sys.com</a>
59	Dynamic Dock & Door	Bret Leveillee	64 Lowell Street Springfield, MA 01089	413-731-1114	<a href="mailto:bret@dynamic-dock-door.com">bret@dynamic-dock-door.com</a>
60	Cross-Spectrum Acoustics	Herb Singleton	P.O. Box 90842 Springfield, MA 01139	413- 315- 5770	<a href="mailto:hsingleton@csacoustics.com">hsingleton@csacoustics.com</a>
61	Carpenters Union	Jason Garand	29 Oakland St. Springfield, MA 01108	413-736-2878 781-321-6282	<a href="mailto:igarand@nercc.org">igarand@nercc.org</a>
62	Younger Brothers, Const.	Clyde L. Younger Kenneth Bedrosian	44 Bedford Rd. Carlisle, MA 01741	617-512-9477 978-371-7797	<a href="mailto:cyounger@youngercorp.com">cyounger@youngercorp.com</a> <a href="mailto:kgbprojectservices@comcast.com">kgbprojectservices@comcast.com</a>
63	KeeClean Management	Tom Elliot	2 Corporate Drive Shelton, CT 06484	203-397-2532	<a href="mailto:tom.elliott@keeclean.com">tom.elliott@keeclean.com</a>
64	L.P. Consultant	Kiran Nijamudar		860-558-9887	<a href="mailto:lpconsultants@snet.net">lpconsultants@snet.net</a>
65	Advanced Architectural Metal Specialties Corp.	Diane Johanson	15 4th St. Taunton, MA 02780	508-824-8333	<a href="mailto:djoh@aams-corp.com">djoh@aams-corp.com</a>
66	Atlantic Fasteners	John Kraus	49 Heywood Ave. W.Springfield, MA 01090	413-241-2225	<a href="mailto:jkraus@atlanticfasteners.com">jkraus@atlanticfasteners.com</a>
67	InOrder Business Solutions	Shelley Webster	7 Crickett Lane Randolph, MA 02368	617-719-7869	<a href="mailto:shelleywebster@comcast.net">shelleywebster@comcast.net</a>

### Minority/Women Owned Business Enterprise (M/WBE) POST Workshop(s) Outreach

	Company	Contact	Address	Phone	Email
1	Atlantic Bay Contracting Co., Inc.	Shaunda O'Neal	100 Hano Street, Suite 22, Allston, MA 02134	617-782- 4986	<a href="mailto:shaunda.atlanticbay@gmail.com">shaunda.atlanticbay@gmail.com</a>
2	ABLE Associates	Eileen Wheeler	315 Pleasant Street Fall River, MA 02721	508-673- 3979	<a href="mailto:eileen@able.jobs">eileen@able.jobs</a>
3	Benchmark Office Systems	Cheryl Jens	58 Range Road Windham, NH 03087	603-890- 2474	<a href="mailto:cheryl.jens@benchmark-office.com">cheryl.jens@benchmark-office.com</a>
4	US Eco Products, Corp.	Doreen Blades	P.O. Box 213 W. Newbury, MA 01985	978-457- 9229	<a href="mailto:doreen@usecoproducts.com">doreen@usecoproducts.com</a>
5	Checks and Balances, Inc	April Pessaud	10550 Linden Lake Plza Manassas, VA 20109	703-345- 0731	<a href="mailto:apessaud@eeihr.com">apessaud@eeihr.com</a>
6	Heritage Construction & Supply	Bernadette Carroll	239 Dorchester Street Boston, MA 02127	617-269- 3430	<a href="mailto:Berna002@yahoo.com">Berna002@yahoo.com</a>
7	Tantara Associates Corp	Dawn Dearborn	54 Mason Street Worcester, MA 01610	508-752- 5599	<a href="mailto:ddearborn@tantaracorp.com">ddearborn@tantaracorp.com</a>
8	Dnutch Associates, Inc.	Denise Jones	13 Branch Street Methuen, MA 01844	978-687- 1500	<a href="mailto:Djones@dnutch.com">Djones@dnutch.com</a>
9	Quabbin Healthcare Consulting, Inc.	Lynn Shaw	30 Barre Road Petersham, MA 01366	978-724- 0040	<a href="mailto:quabbinhcc@gmail.com">quabbinhcc@gmail.com</a>
10	Simco Engineering PC	Muhammad Siddiqui	80 Maiden Ln, New York, NY 10038	212- 385- 8100	<a href="mailto:msiddiqui@simcopc.com">msiddiqui@simcopc.com</a>
11	LPI East, LLC	Kevin Bell	100 Pearl Street Hartford, CT 06103	888-842- 0561 x 103	<a href="mailto:kbell@lpieast.com">kbell@lpieast.com</a>
12	Cygnus, LLC	Gabriela Naydenov	510 E 41st Street Paterson, NJ 07504	973-523- 0668	<a href="mailto:gabriela@cygnusnj.com">gabriela@cygnusnj.com</a>
13	MRI USA Inc	Stephen Bernstein Gayle Bernstein	228 East 45 Street, Suite 1801, NY NY 10017	212-867- 9600	<a href="mailto:stephen.bernstein@mriusa.biz">stephen.bernstein@mriusa.biz</a>

	Company	Contact	Address	Phone	Email
14	Premier Paint Finishes Inc.	Alvera Payne	34 Mallon Road Dorchester, MA 02121	617-533-8367	<a href="mailto:alverapaynejones@hotmail.com">alverapaynejones@hotmail.com</a>
15	Success Strategies, Inc (DBA Docwhiz)	Paula Stanziani	94 Merrymount Rd. Quincy, MA 02169	617-240-8825	<a href="mailto:paula@docwhiz.biz">paula@docwhiz.biz</a>
16	Security Construction Services Inc	Janet Ceddia	59 Apsley Street Hudson, MA 01749	978-562-0770	<a href="mailto:iceddia@security-construction.com">iceddia@security-construction.com</a>
17	Matrix Railway	Nelson Rivas	69 Nancy Street West Babylon, NY 11704	516-351-2861	<a href="mailto:nrivas@matrixrailway.com">nrivas@matrixrailway.com</a>
18	Ritronics	Steven Cobb	60 U.S. 1 Warwick, RI 02886	401-732-8175	<a href="mailto:steve.cobb@ritronics.com">steve.cobb@ritronics.com</a>
19	BSV Metal Finisher	Benjamin Vasquez	750 St. Paul Street Rochester, NY 14605	585-454-0550	<a href="mailto:bvasquez001@hotmail.com">bvasquez001@hotmail.com</a>
20	Ferreira Towing, Inc	Mary Jo Glynn	293 Littleton Road Chelmsford, MA 01824	978-454-7914	<a href="mailto:maryjo@ferreiratowing.net">maryjo@ferreiratowing.net</a>
21	The Cruz Companies	Lisa Barros	One John Eliot Sq Roxbury, MA 02119	617-442-2496	<a href="mailto:lauriesnow@cruzcompanies.com">lauriesnow@cruzcompanies.com</a>
22	JP and Concept Co. JPCO	JoAnn Forance	9060 Paseo De Valencia St., Fort Myers, 33908	239-437-3108	<a href="mailto:jpforance@jpco-dbe.com">jpforance@jpco-dbe.com</a>
23	The Fairland Company	William Walker		978-658-5800	<a href="mailto:www@fairland.biz">www@fairland.biz</a>
24	JFK Environmental Services LLC	Jayne Knott	115 Glen Avenue Upton, MA 01568	508-344-2831	<a href="mailto:jfknott@jfkenviroserv.com">jfknott@jfkenviroserv.com</a>
25	Corporate Environmental Advisors	Kristy Fitzpatrick	127 Hartwell St. Suite 2 West Boylston, MA 01583	800-358-7960	<a href="mailto:kfitzpatrick@cea-inc.com">kfitzpatrick@cea-inc.com</a>
26	Samiotes Consulting	Chuck Samiotes PE	20 A. Street Framingham, MA 01701	508-877-6688	<a href="mailto:csamiotes@samiotes.com">csamiotes@samiotes.com</a>
27	Contine Corporation		1820 Wagle Road Erie, PA 16510	814-899-0006	
28	Goyal Enterprises	Joy Goyal	382 Park Ave East Mansfield, Ohio, 44905	419-522-7099	
29	Altech Services, Inc.	Kenneth Isaacs	P.O. Box 3456 Wayne, NJ 07474	973-541-9898	
30	Savin Engineers PC	Dr.R.Srinivasaraghava	3 Campus Drive, Pleasantville, NY 10570	914-769-3200	<a href="mailto:info@savinengineers.com">info@savinengineers.com</a>
31	Lin Industries, Inc. (LECIP)	Stuart Crust	6314 Ice House Road Hornell, NY 14843	631-249-2070	<a href="mailto:scrust@lecipinc.com">scrust@lecipinc.com</a>
32	NEDC Sealing Solutions	Kimberly Abare	42 Newark Street Haverhill, MA 01832	978.374.0789	<a href="mailto:kabare@nedc.com">kabare@nedc.com</a>



## Attachment B

### M/WBE Participation Summary

#### ATTACHMENT B

**CNR has committed to the following Percentages**

**M/WBE Content for Base Contract 16.00%**

152 Orange Line Cars

74 Red Line Cars

Capital Spares

Manuals and Training

Ancillary Materials and Services

Manufacturing and Facility Set-up

**M/WBE Content for Total Base and Option Contract 15.00%**

**CNR has calculated and projects the following percentages of M/WBE content for the Base Award and Total Proposal.**

Content	Base Award	Total Proposal
<b>Secured Content</b>		
Vehicle Components		
Secured through agreements and through expectations from primary vendor submittals.		
Trucking		
Technical Consulting		
<b>Total Secured Content</b>	<b>7.79%</b>	<b>8.88%</b>
<b>Unsecured but Anticipated Contracts</b>	<b>8.21%</b>	<b>6.12%</b>
General Construction & Facility Setup		
Human Resources		
Visa Applications		
Metal Fabrication		
Vehicle Components		
<b>Total Secured and Unsecured Content*</b>	<b>16.00%</b>	<b>15.00%</b>

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## **6 APPENDIX – ADDITIONAL DOCUMENTATION**

## 6.1 CONCEPTUAL DESIGN DRAWINGS

Below is the RFP requirement for the Conceptual Design Drawings:

Tab I.1 (m) Organization Chart, Resume and Responsibilities of Key Staff
--

<i>Provide one (1) print each of the following conceptual designs for each car type (Orange, Red, Cab Car, Non-Cab Car): General Arrangement Drawings (Interior and Exterior); Floor Plans; Equipment Arrangement; Carbody structural Diagram; Truck General Arrangement Drawing; and Cab and Console Layout.</i>
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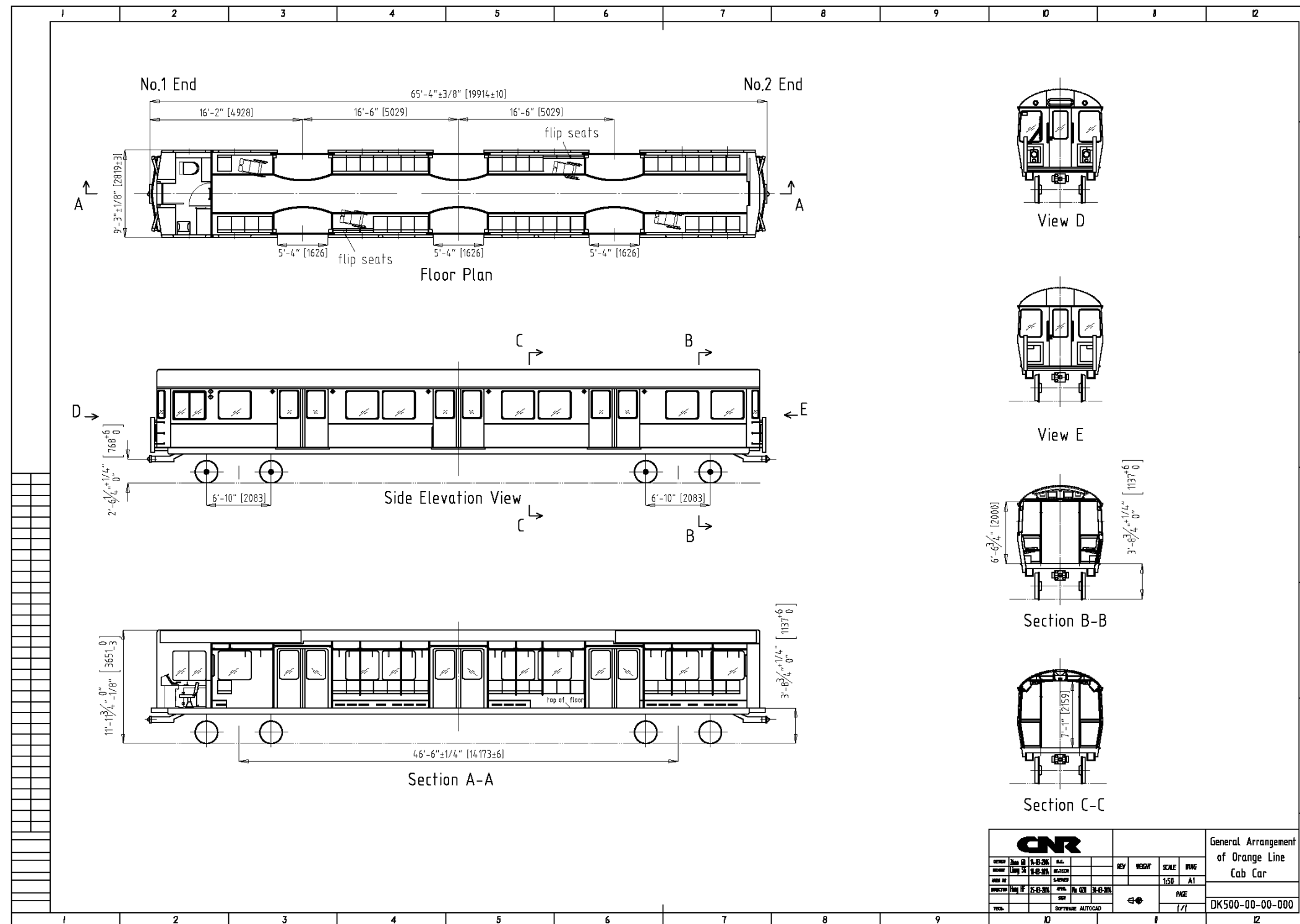
The drawings provided in this section are list below in the order in which they appear:

- General Arrangement (Interior and Exterior)
  - Orange Line, Cab Car
  - Orange Line, Non-Cab Car
  - Red Line, Cab Car
  - Red Line, Non-Cab Car
- Floor Plans
  - Floor Plan of Orange Line Cab Car
  - Floor Plan of Orange Line Non-Cab Car
  - Floor Plan of Red Line Cab Car
  - Floor Plan of Red Line Non-Cab Car
- Underfloor Equipment Arrangement
  - Layout of Underfloor Equipment of Orange Line Cab Car
  - Layout of Underfloor Equipment of Orange Line Non-Cab Car
  - Layout of Underfloor Equipment of Red Line Cab Car
  - Layout of Underfloor Equipment of Red Line Non-Cab Car
- Carbody Structural Diagrams
  - Structural Arrangement of Orange Line Cab Car
  - Structural Arrangement of Orange Line Non-Cab Car
  - Structural Arrangement of Red Line Cab Car
  - Structural Arrangement of Red Line Non-Cab Car
- Truck General Arrangement
  - No. 1 End Truck Assembly
  - No. 2 End Truck Assembly
- Cab and Console Layouts
  - Cab and Console Layout of Orange Line Car
  - Cab and Console Layout of Red Line Car

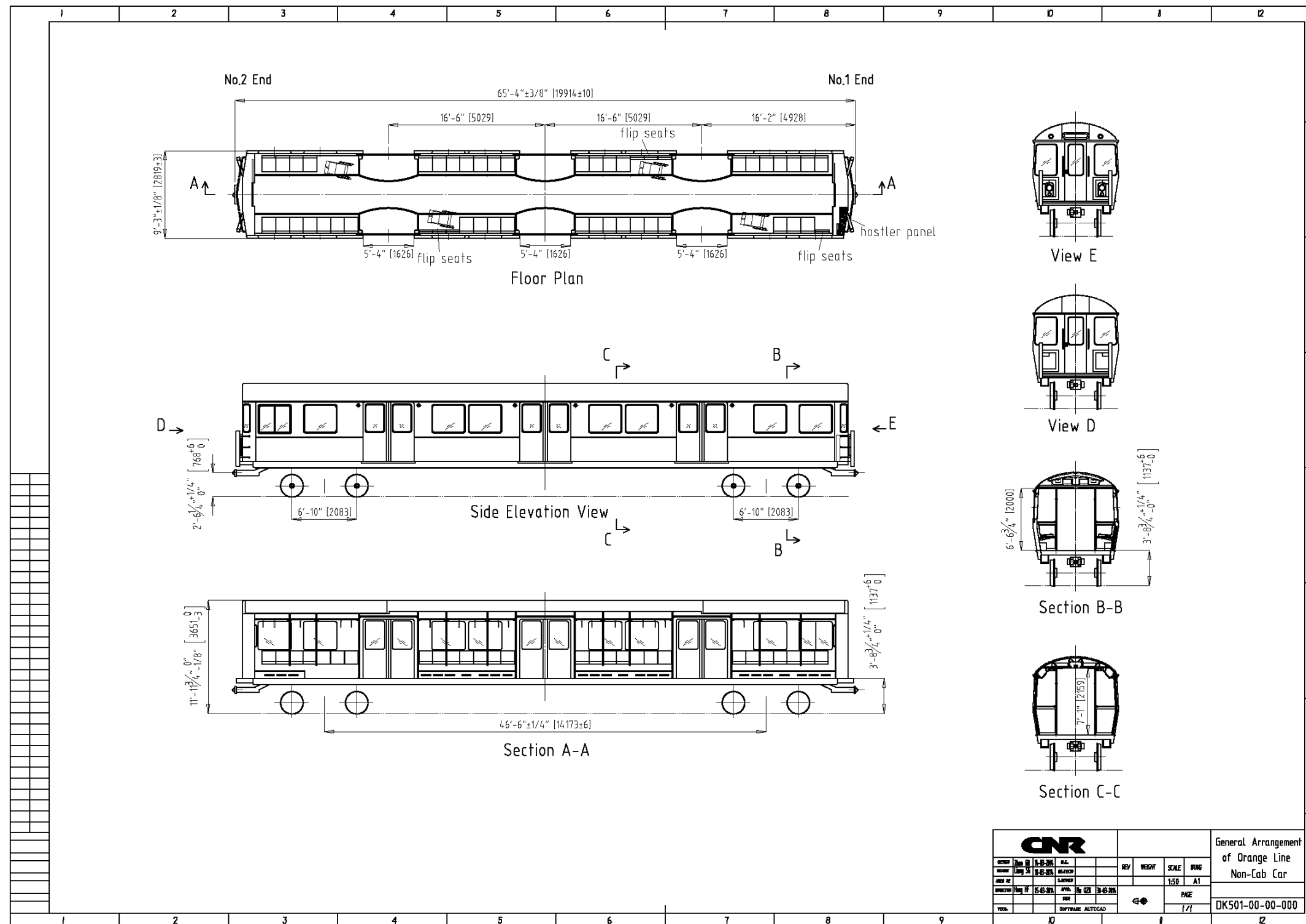


### 6.1.1 General Arrangements – Interior and Exterior

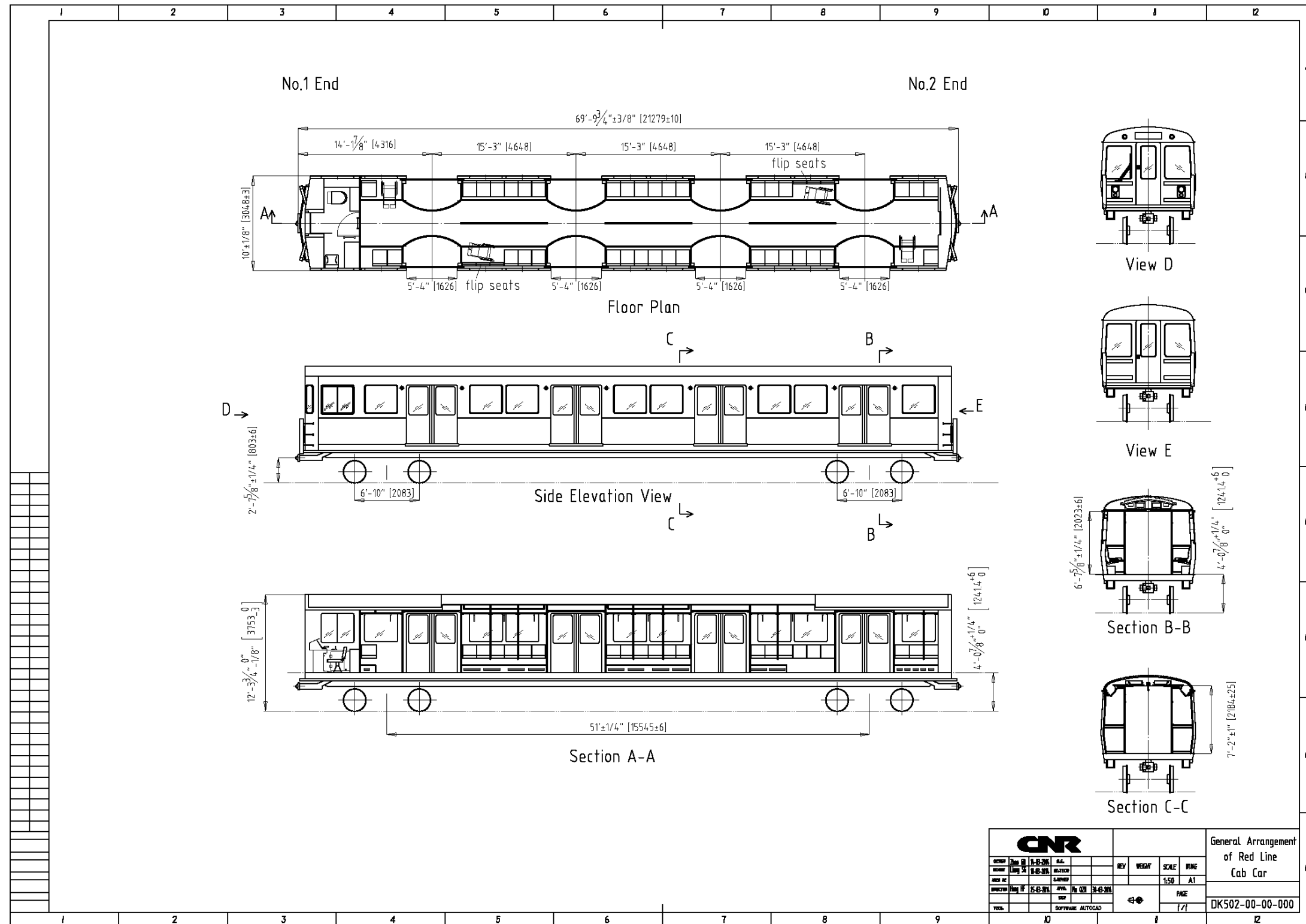
General Arrangements – Interior and Exterior: Orange Line, Cab Car



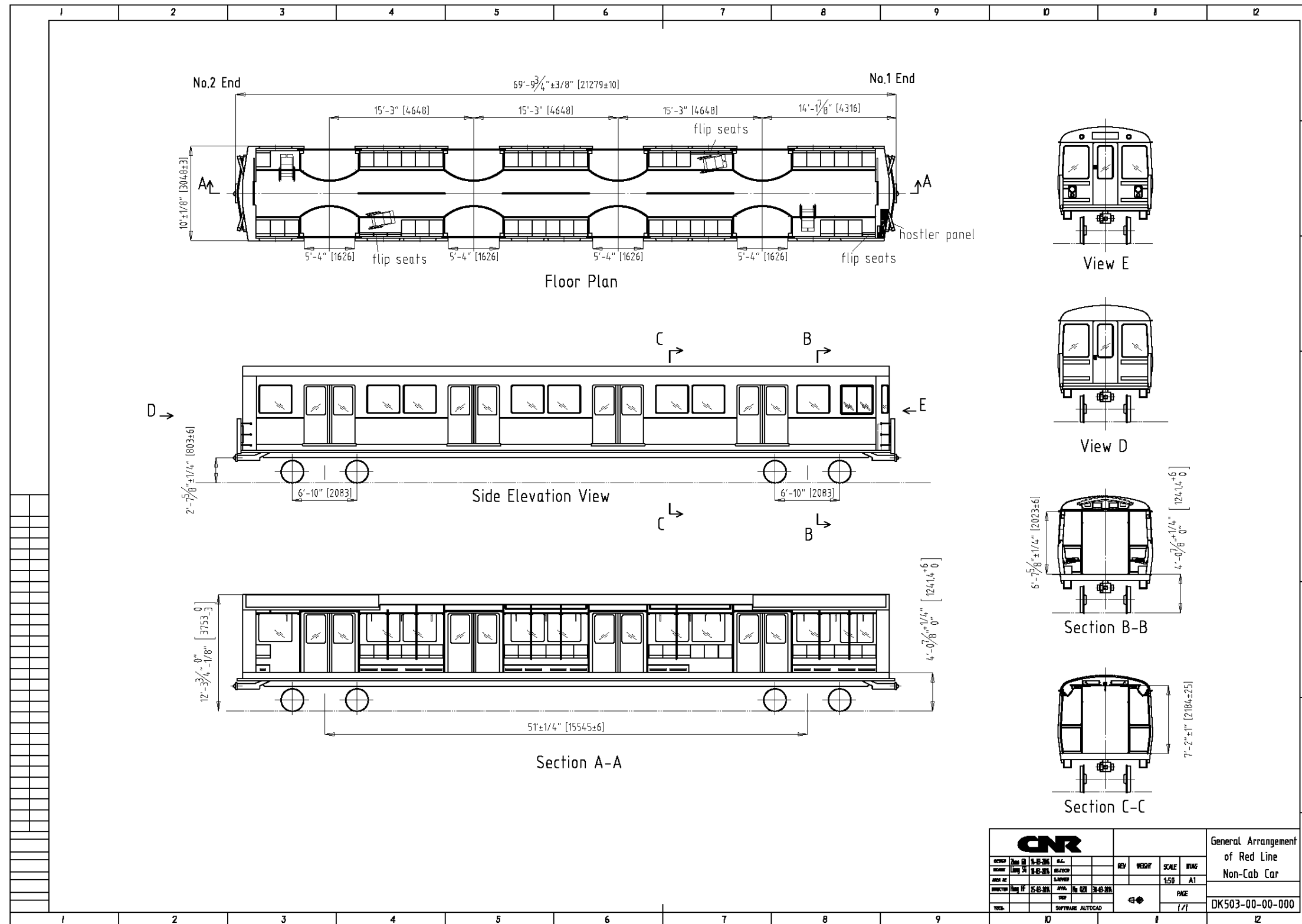
General Arrangements – Interior and Exterior: Orange Line, Non-Cab Car



General Arrangements – Interior and Exterior: Red Line, Cab Car



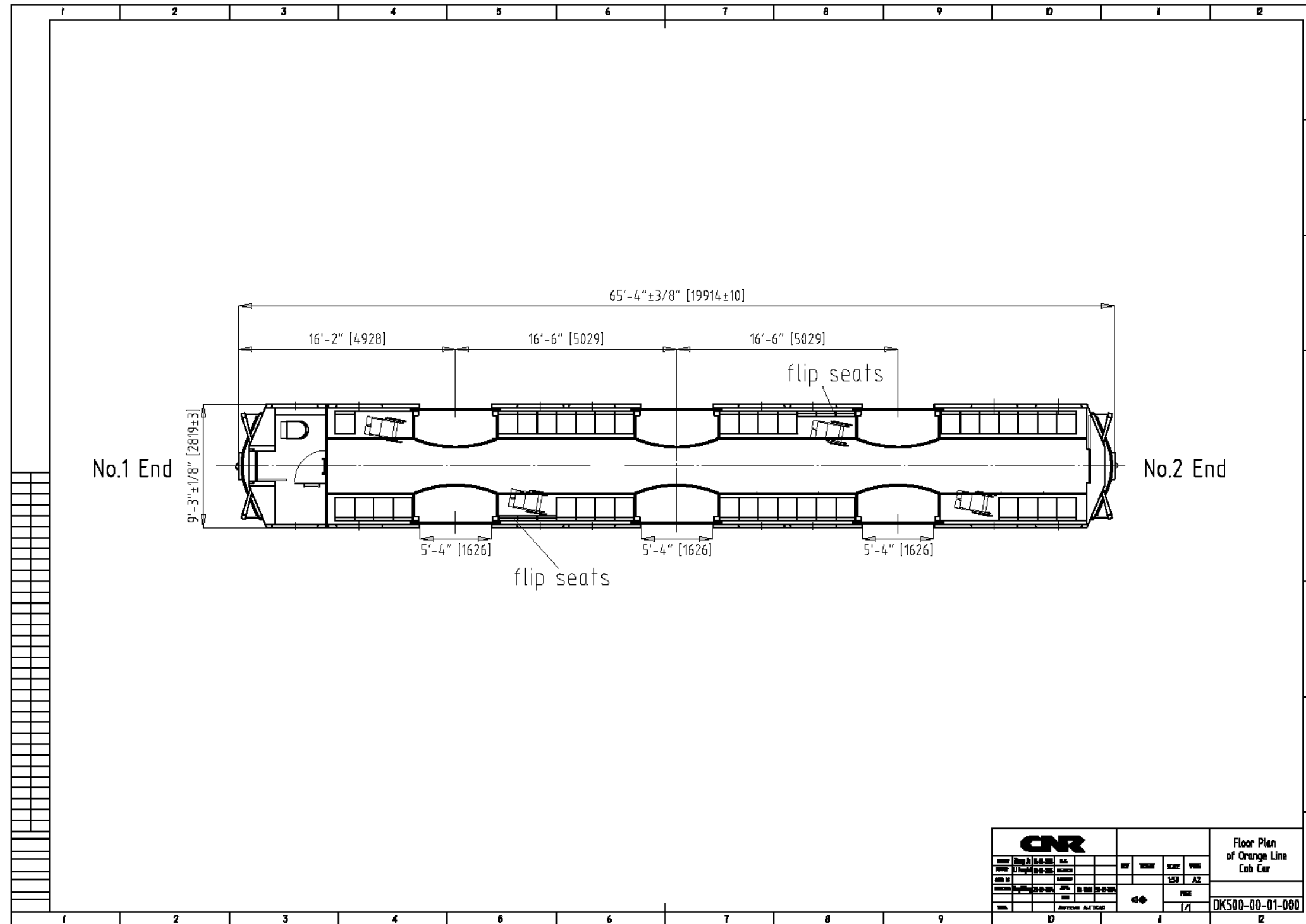
General Arrangements – Interior and Exterior: Red Line, Non-Cab Car



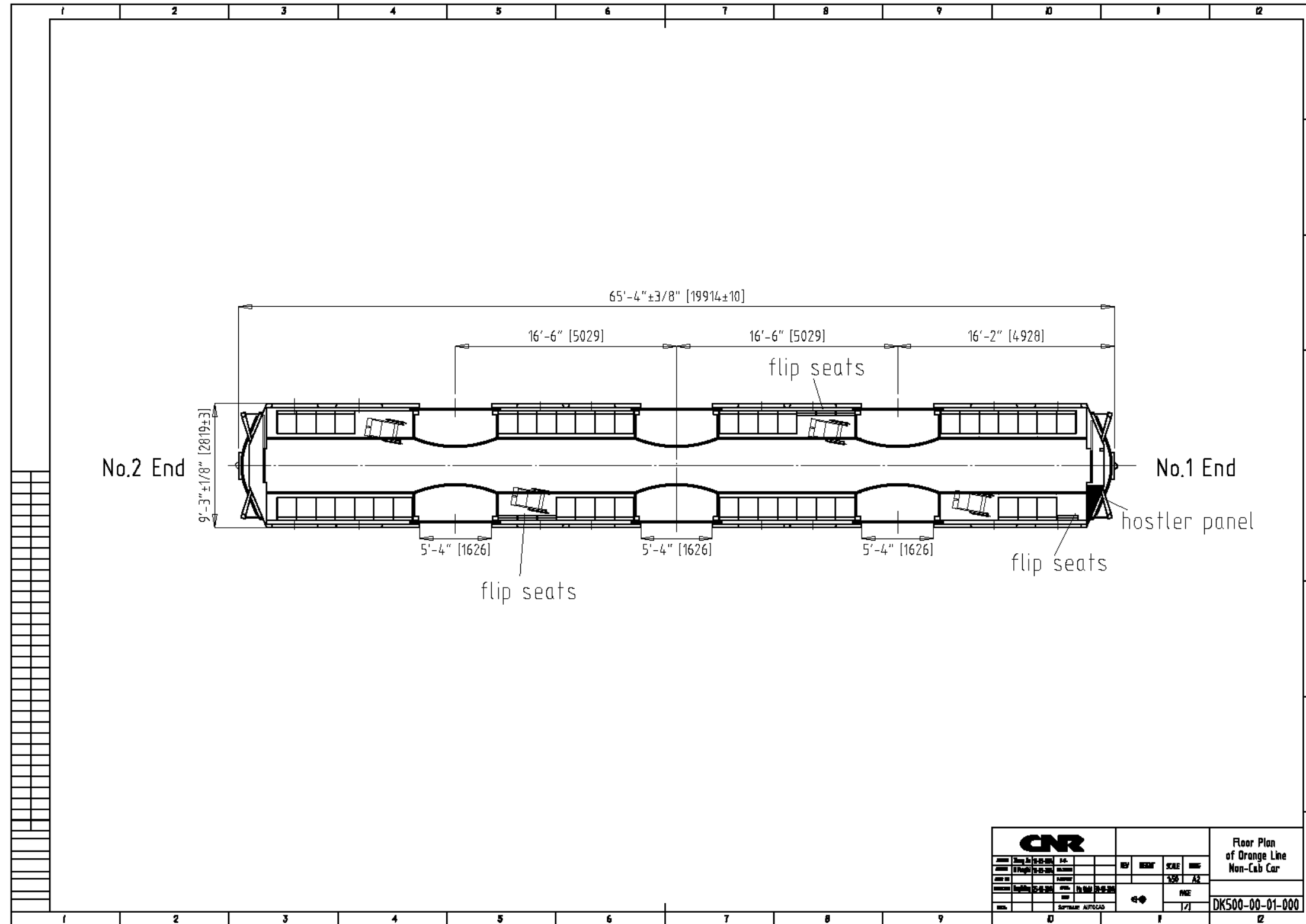


## 6.1.2 Floor Plans

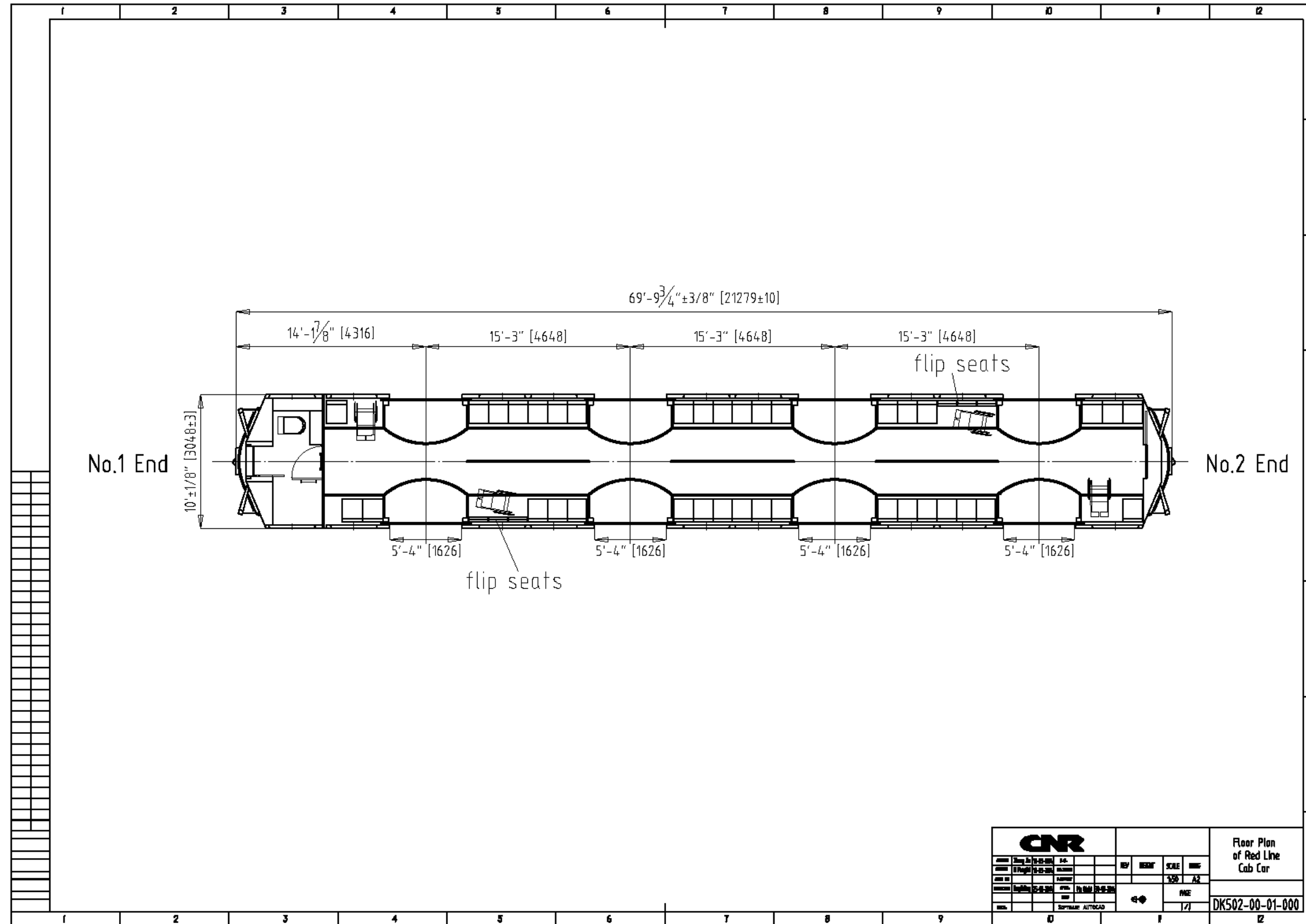
Floor Plans: Orange Line, Cab Car



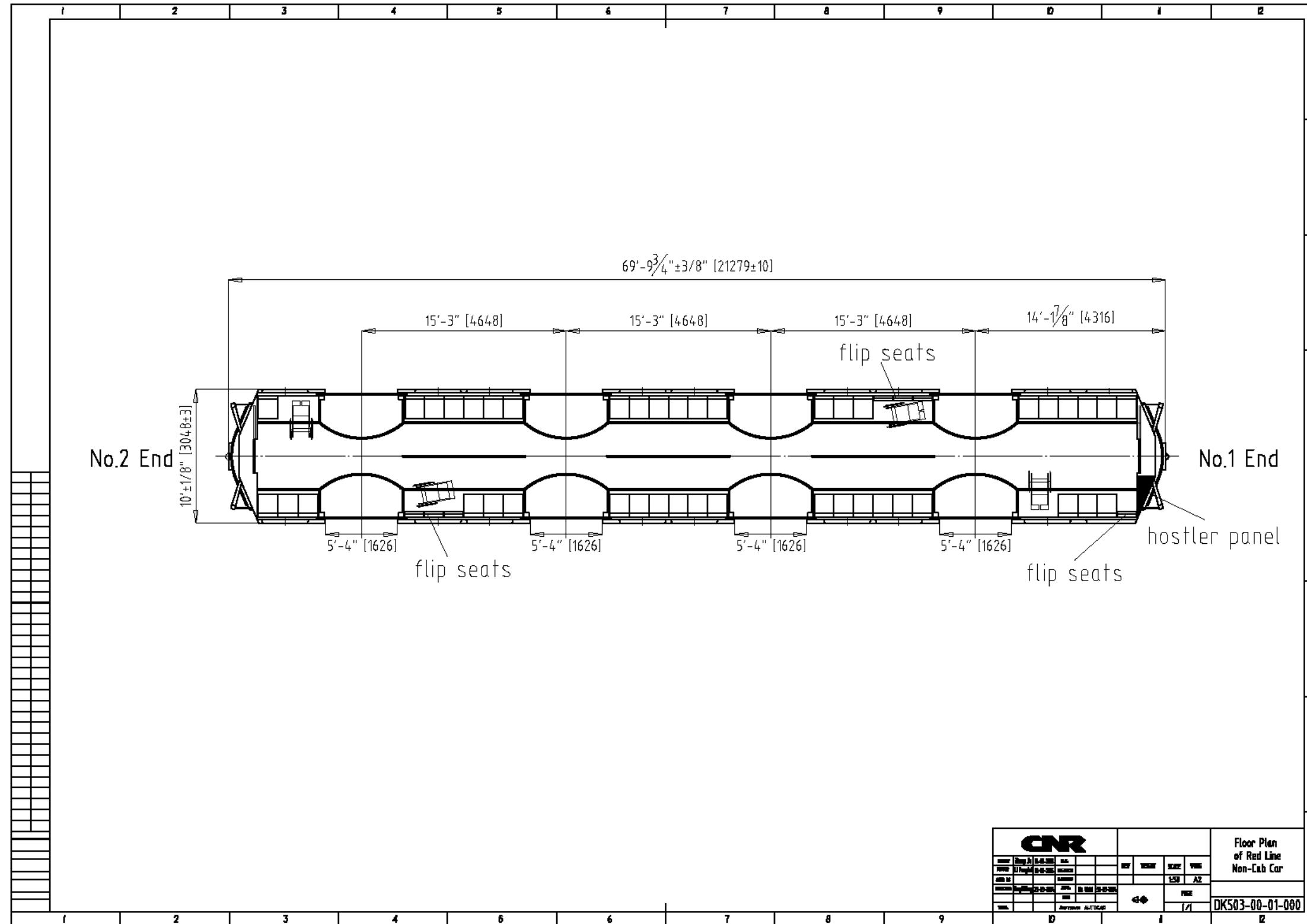
Floor Plans: Orange Line, Non-Cab Car



Floor Plans: Red Line, Cab Car

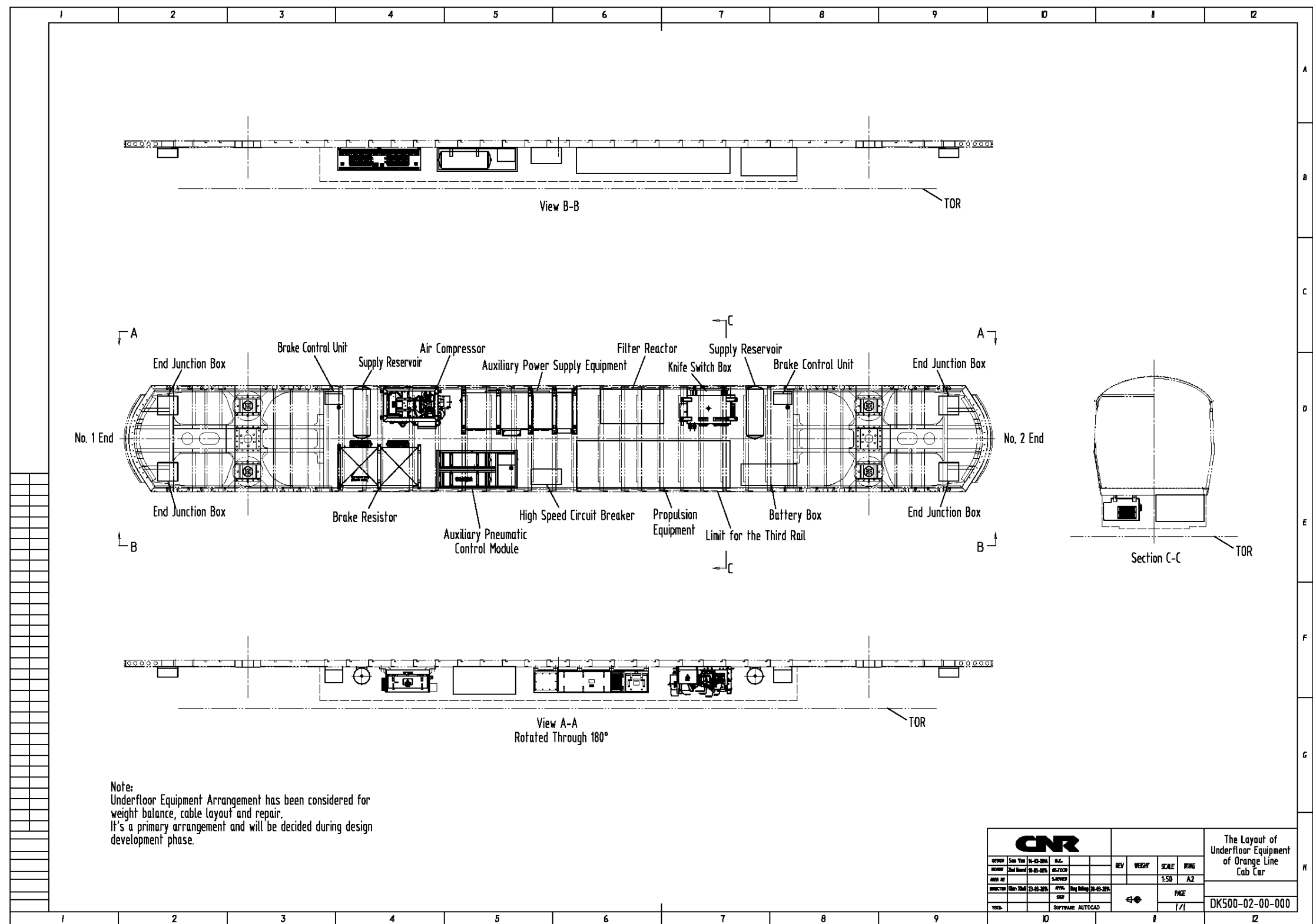


Floor Plans: Red Line, Non-Cab Car





Equipment Arrangement: Orange Line, Cab Car



**View B-B**

**View A-A**  
Rotated Through 180°

**Section C-C**

**Labels:** TOR, No. 1 End, No. 2 End, End Junction Box, Brake Control Unit, Auxiliary Power Supply Equipment, Filter Reactor, Supply Reservoir, High Speed Circuit Breaker, Knife Switch Box, Brake Resistor, Auxiliary Pneumatic Control Module, Battery Box, Propulsion Equipment, Limit for the Third Rail.

**Note:**  
Underfloor Equipment Arrangement has been considered for weight balance, cable layout and repair.  
It's a primary arrangement and will be decided during design development phase.

<b>CNR</b>											
DESIGN	CHKD	DATE	BY	REV	WEIGHT	SCALE	WING	The Layout of Underfloor Equipment of Orange Line Non-Cab Car			
DESIGN	CHKD	DATE	BY	REV	WEIGHT	SCALE	WING				
DESIGN	CHKD	DATE	BY	REV	WEIGHT	SCALE	WING				
DESIGN	CHKD	DATE	BY	REV	WEIGHT	SCALE	WING				
TITLE								PAGE		1/1	

View B-B

TOR

View A-A  
Rotated Through 180°

TOR

Section C-C

TOR

No. 1 End

No. 2 End

End Junction Box

Brake Control Unit

Supply Reservoir

Air Compressor

Auxiliary Power Supply Equipment

Filter Reactor

Knife Switch Box

Brake Control Unit

End Junction Box

End Junction Box

Brake Resistor

Auxiliary Pneumatic Control Module

High Speed Circuit Breaker

Propulsion Equipment

Battery Box

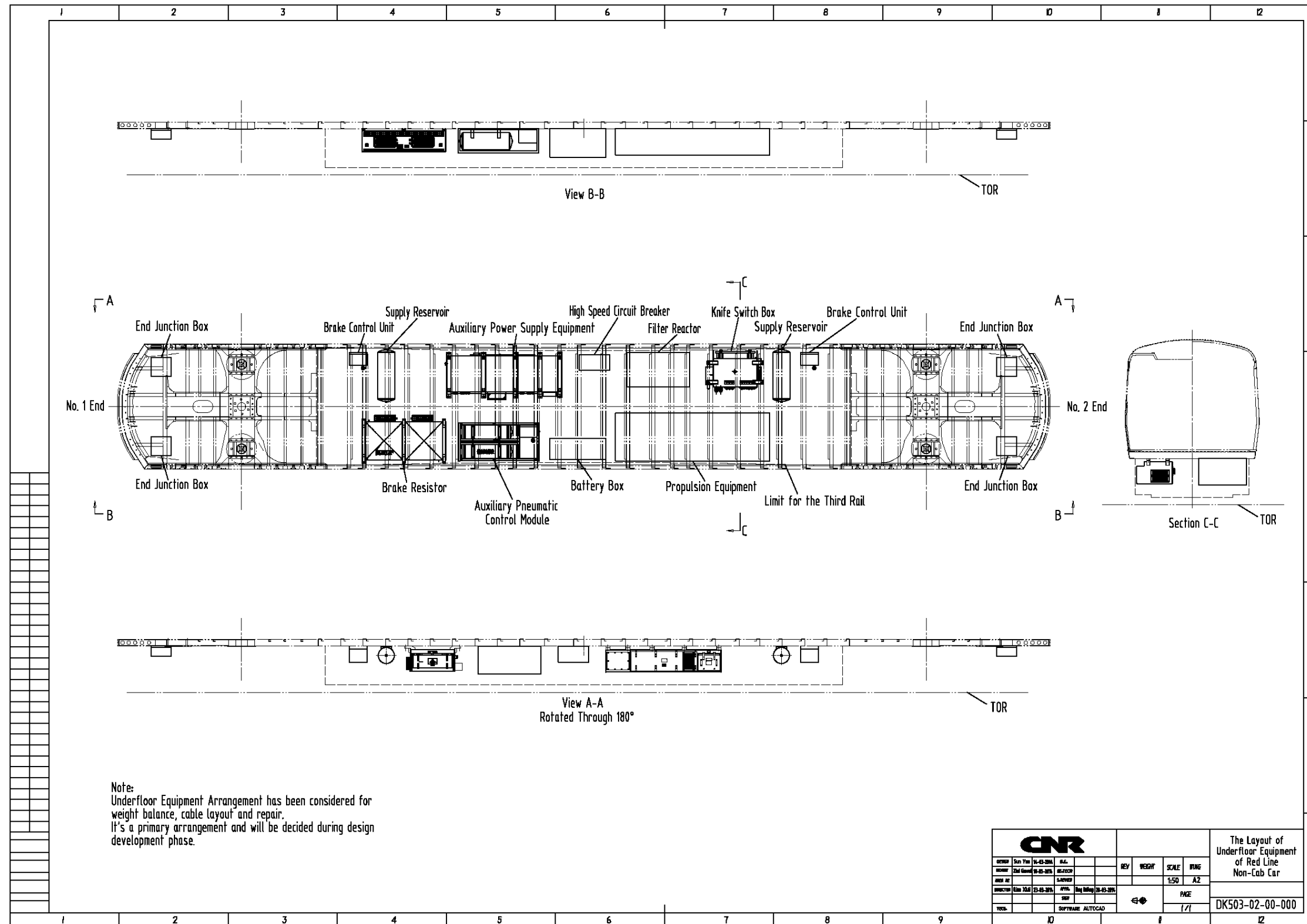
Limit for the Third Rail

End Junction Box

Note:  
Underfloor Equipment Arrangement has been considered for weight balance, cable layout and repair.  
It's a primary arrangement and will be decided during design development phase.

<b>CNR</b>											
DESIGN	See Title	16-03-2016	REV	WEIGHT	SCALE	1:50	1/1	The Layout of Underfloor Equipment of Red Line Cab Car			
REVIEW	2nd Gen	16-03-2016	SLATCH								
APPROV	AP		CLANED					PAGE 1/1			
DESIGNER	Qian Hui	16-03-2016	APPL	Sheng Hui	16-03-2016						
TECH			SWP					DK502-02-00-000			
				SOFTWARE: AUTOCAD							

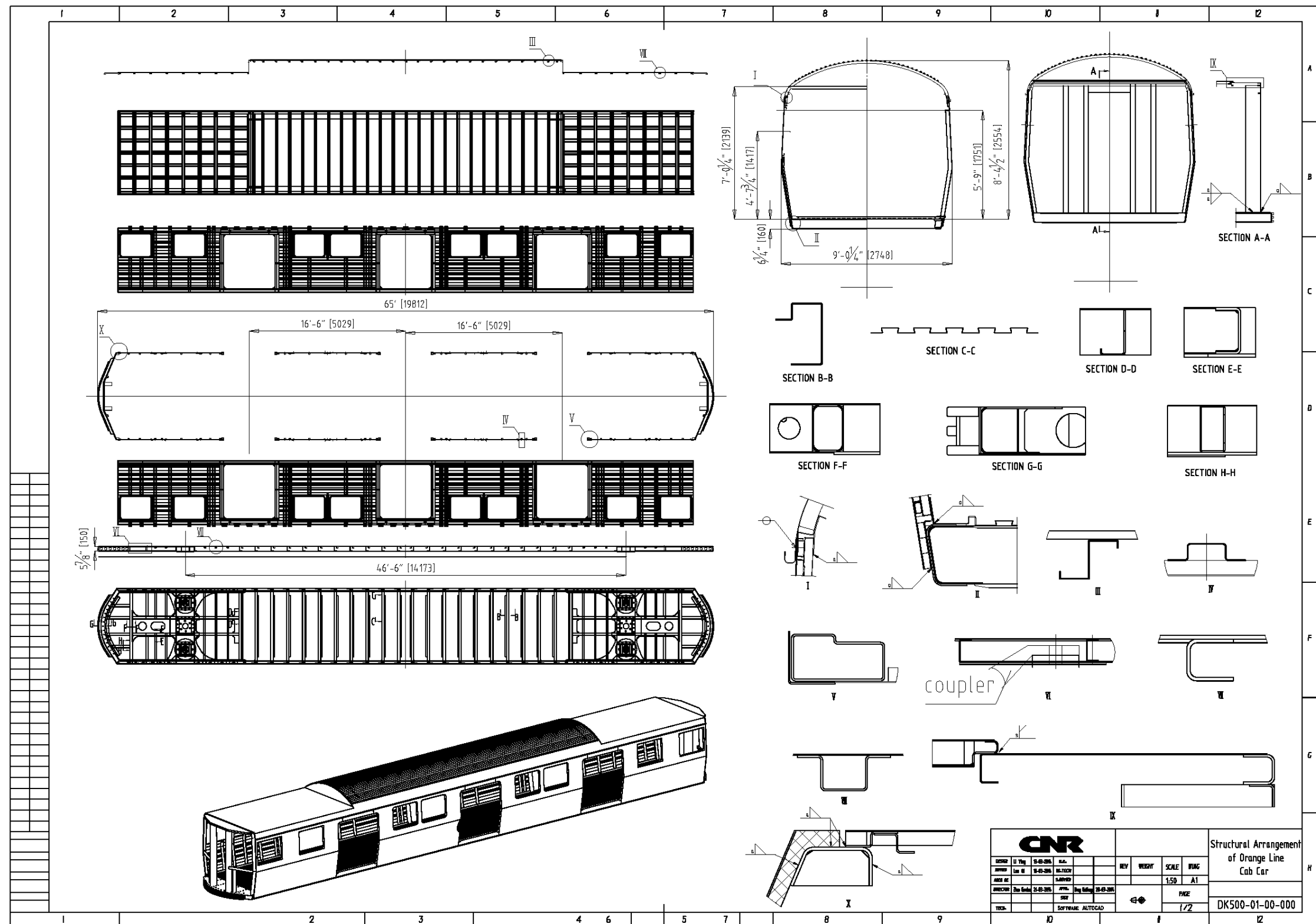
Equipment Arrangement: Red Line, Non-Cab Car





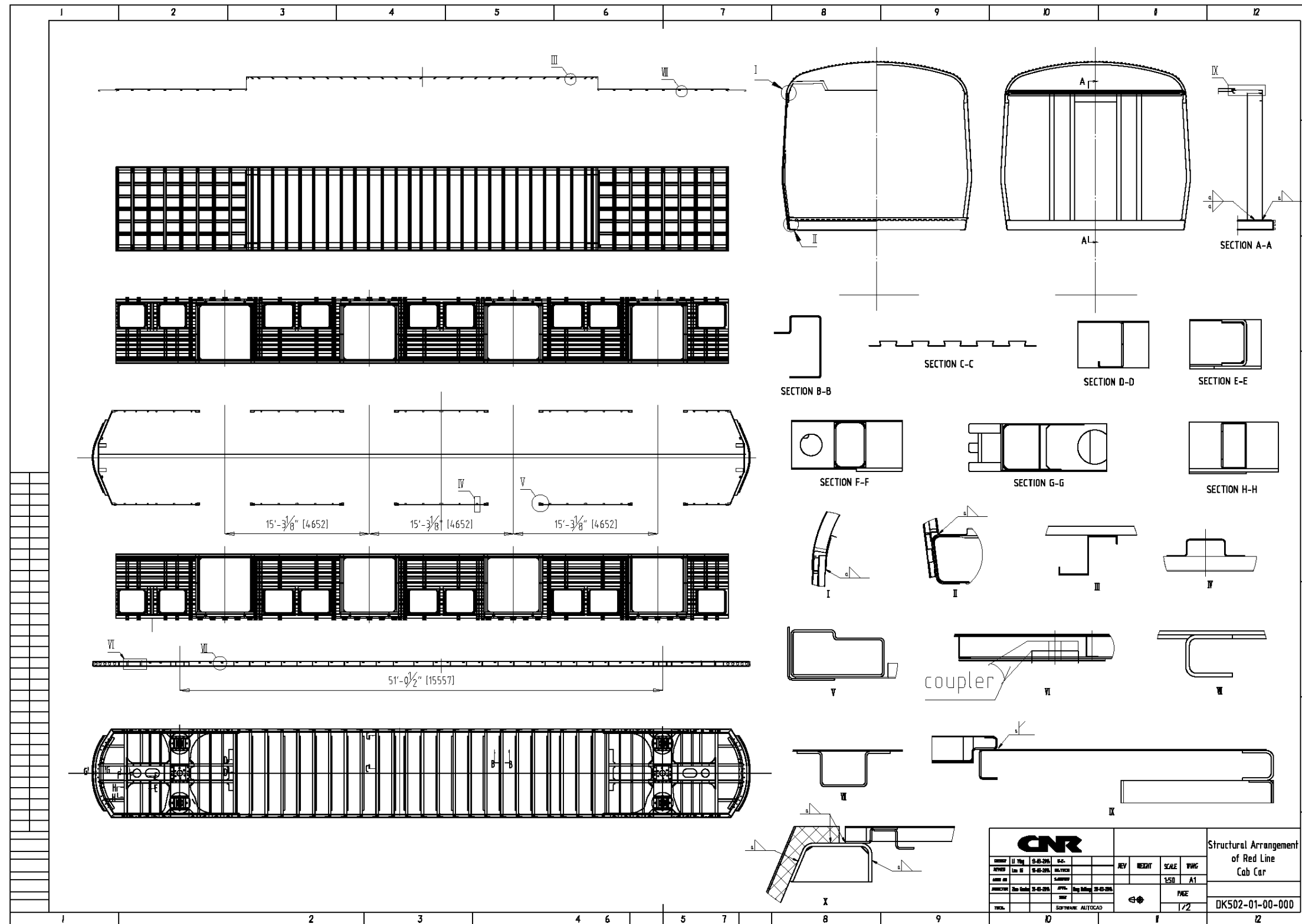
## 6.1.4 Carbody structural Diagrams

Carbody structural Diagrams: Orange Line, Cab Car

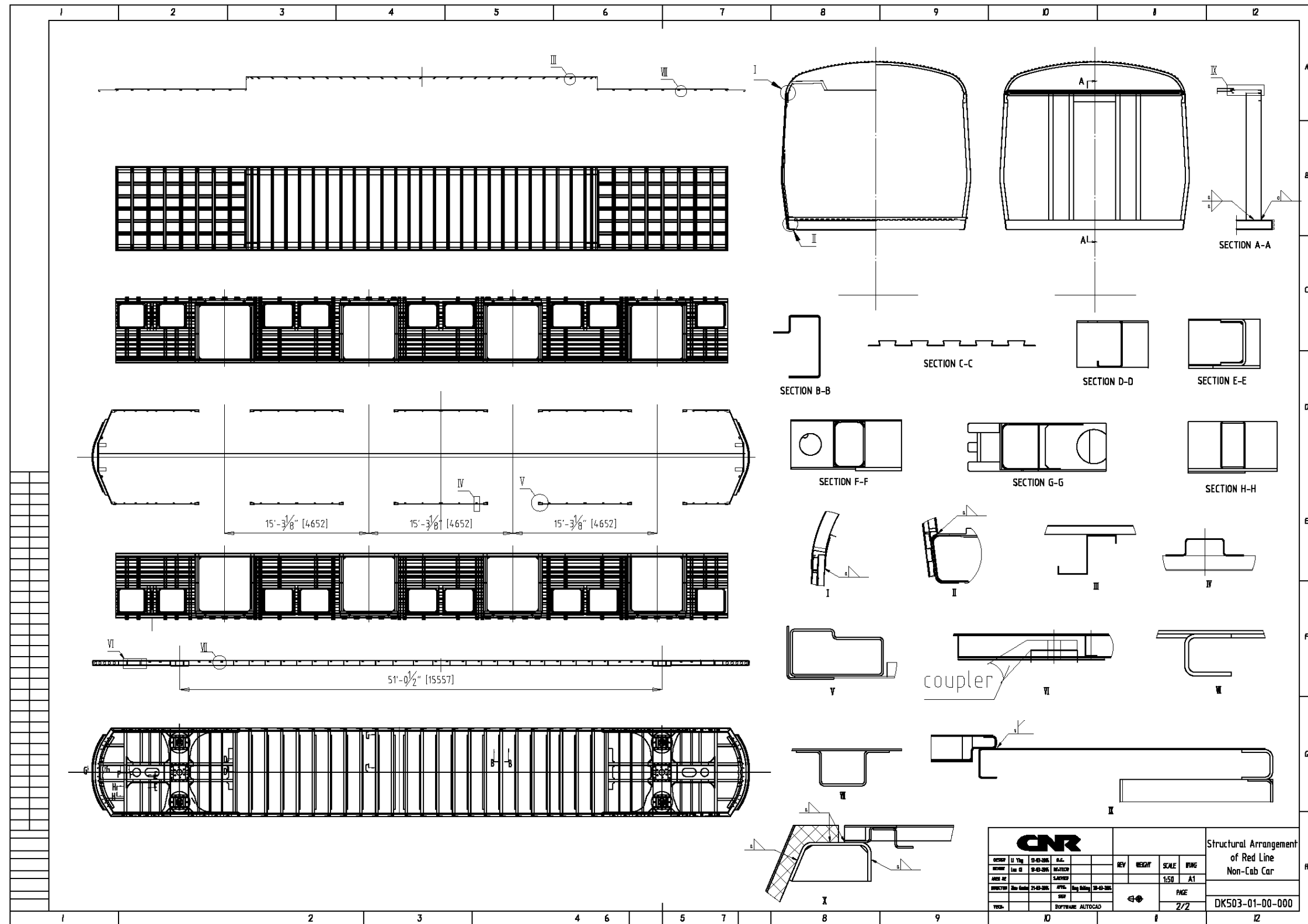


[illegible]

Carbody structural Diagrams: Red Line, Cab Car



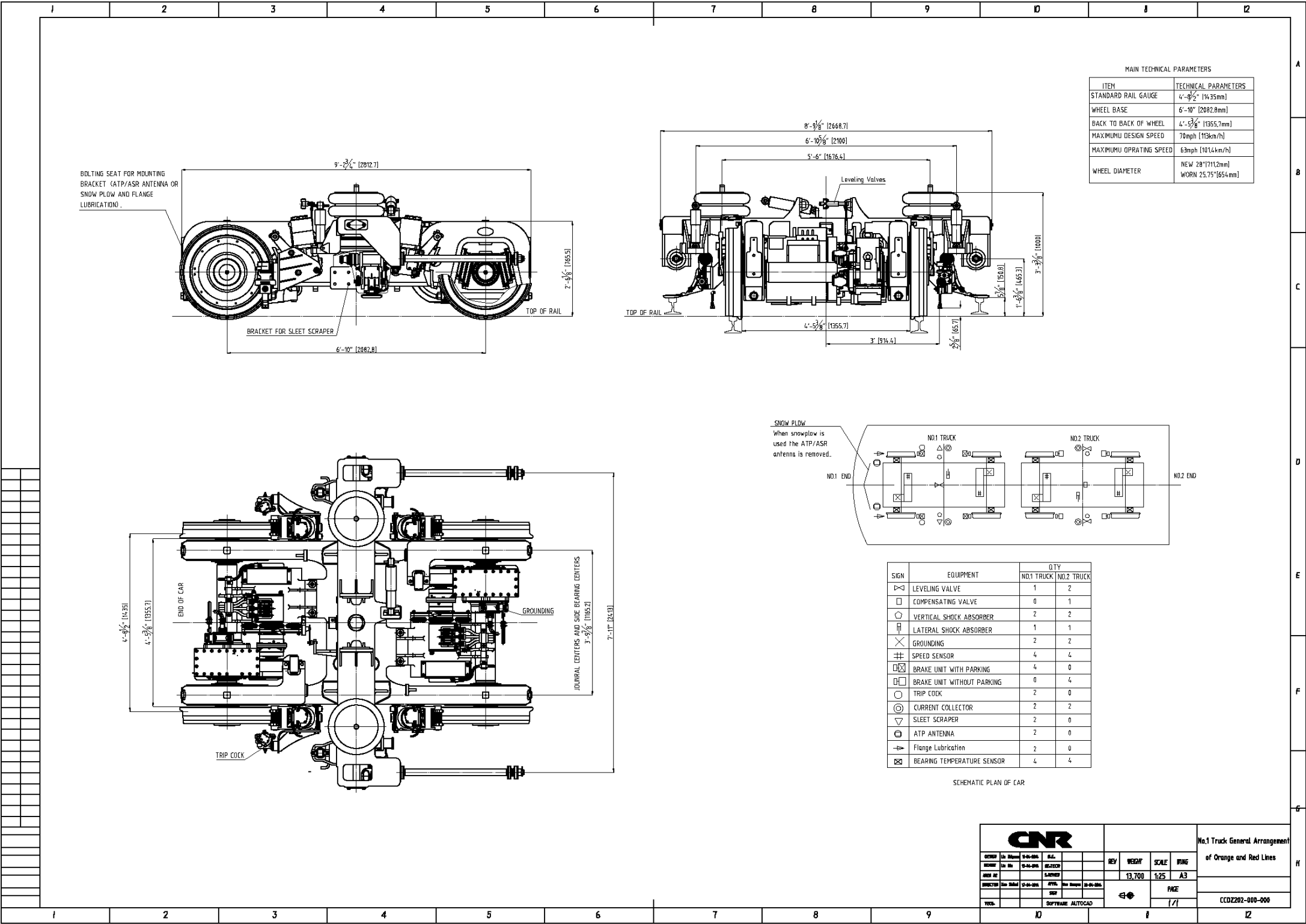
Carbody structural Diagrams: Red Line, Non-Cab Car



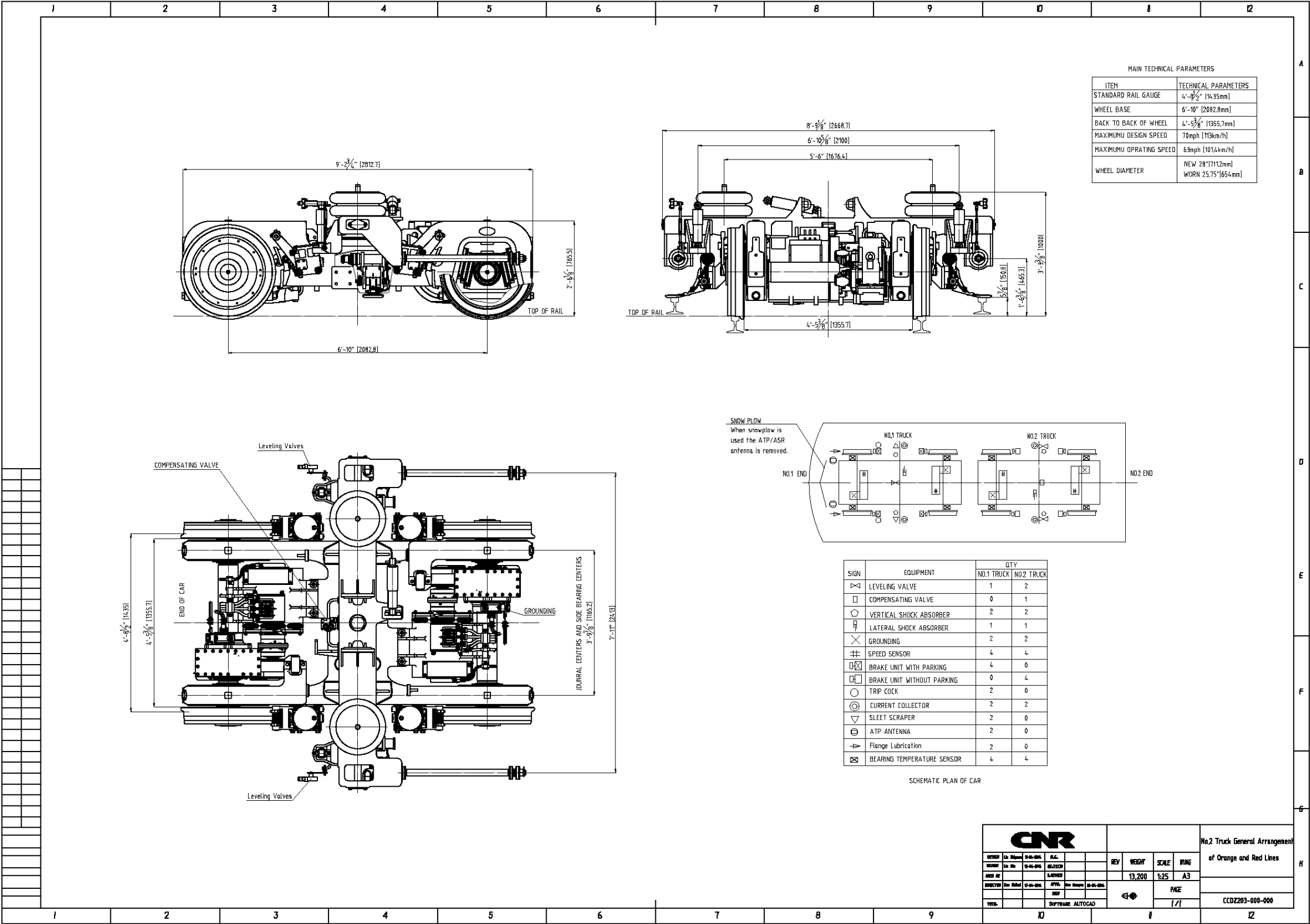


6.1.5 Truck General Arrangement Drawings

Truck General Arrangement Drawings: No.1 Truck Orange and Red Lines car

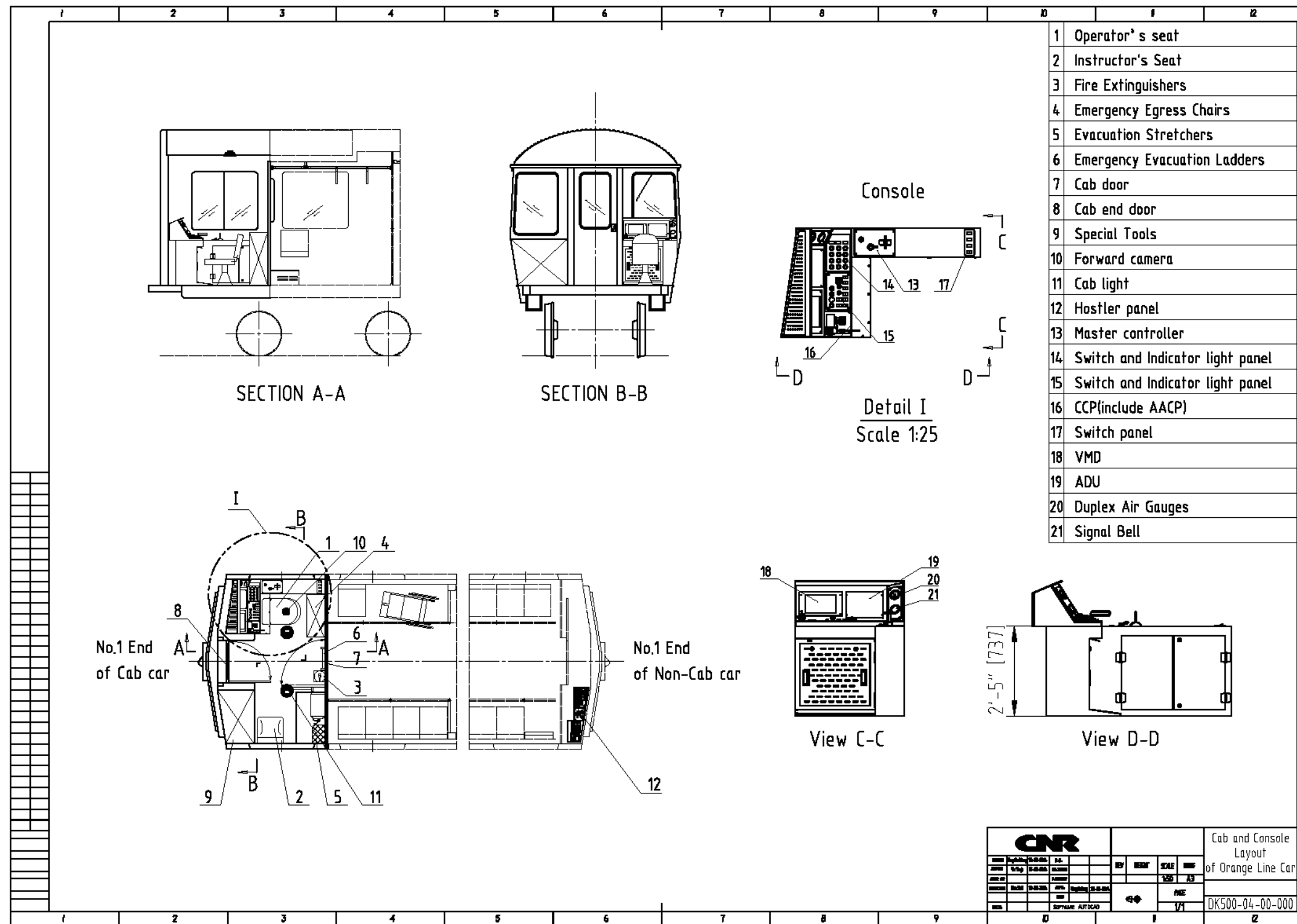


Truck General Arrangement Drawings: No.2 Truck Orange and Red Lines car

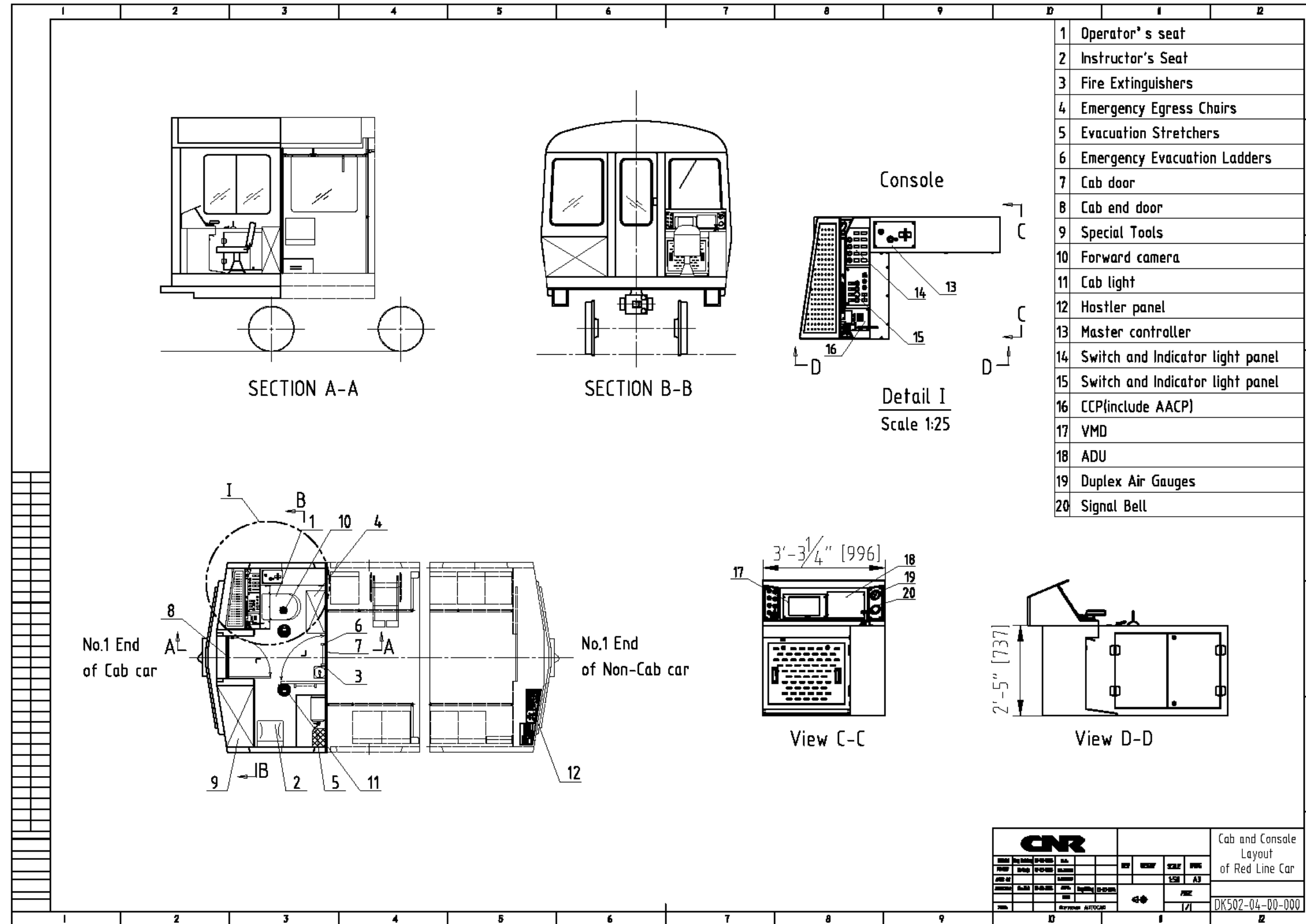


### 6.1.6 Cab and Console Layout:

Cab and Console Layout: Orange Line Car



Cab and Console Layout: Red Line car





## **6.2 M/WBE LETTER OF INTENT AND CERTIFICATION FORMS**

SECTION B  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA CorporationAddress: 111 Huntington AvenueCity: Boston State: MA Zip: 02199Name of M/WBE Firm: RL Controls, LLCAddress: 10 - V Gill StCity: Woburn State: MA Zip: 01801Telephone: 781-932-3349

Description of work to be performed by M/WBE firm:

Harness assembly - build, spool,  
install + fasten into vehicle

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By Gene R. Walsh Principal/Owner  
(Signature and Title of Authorized Official)Date: 5/1/14

If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.

(Offeror shall submit this page for each M/WBE subcontractor.)

SECTION B  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA CorporationAddress: 111 Huntington AvenueCity: Boston State: Ma Zip: 02199Name of M/WBE Firm: RL Controls, LLCAddress: 10-V Gill StCity: Woburn State: MA Zip: 01801Telephone: 781-932-3349

Description of work to be performed by M/WBE firm:

Electrical Cabinet Assembly

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By: Gene R. Webb Principal/owner  
(Signature and Title of Authorized Official)Date: 5/1/14

If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: RL Controls, LLC

Address: 10-V Gill Street

City: Woburn State: MA Zip: 01801

Telephone: 781-932-3349

**Description of work to be performed by M/WBE firm:**

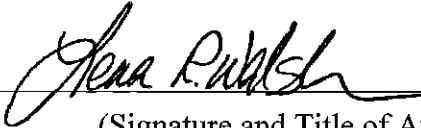
As per RLC-ISC-1333 TP R02-MBTA Red-OR-CNR-140418

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  Principal/Owner  
(Signature and Title of Authorized Official)

Date: 4/21/14

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: LydRiv Communications (LRC)

Address: 11 Hallet Street

City: Boston State: MA Zip: 02122

Telephone: 617-851-1095

**Description of work to be performed by M/WBE firm:**

LRC will work collaboratively with CNR MA, the MBTA office of Outreach and Supplier Diversity, and the Massachusetts

Diversity Office to enhance M/WBE participation for the Orange/Red Line Car Procurement LRC will provide Public Relations

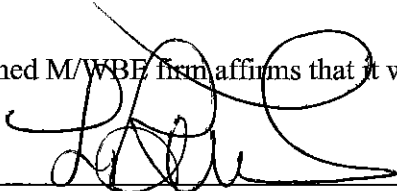
and Community Outreach services including meeting coordination and participation, and media and social media outreach coordination.

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  Lydia M. Rivera, Principal  
(Signature and Title of Authorized Official)

Date April 29, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA Corporation

Address: 111 Huntington Avenue

City: Boston State: MA Zip: 02199

Name of M/WBE Firm: Raul V Bravo + Associates, Inc.

Address: 1889 Preston White Drive, Suite 202

City: Reston State: VA Zip: 20191

Telephone: \_\_\_\_\_

**Description of work to be performed by M/WBE firm:**

Engineering Consulting, Design Assistance, Purchasing, DWBE and Buy America Consulting  
Services, Manuals and Training, Industrial Design

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By: \_\_\_\_\_

(Signature and Title of Authorized Official)

Date: April 24, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA CorporationAddress: 111 Huntington AvenueCity: Boston State: MA Zip: 02199Name of M/WBE Firm: MRI USA, Inc.Address: 228 East 45<sup>TH</sup> St ALEXANDRIA, SUITE 1801City: NEW YORK State: NY Zip: 10017Telephone: 212-867-9600**Description of work to be performed by M/WBE firm:**TRANSPORTATION OF CAR SHELLS AND COMPLETE CARS

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By:  GAYLE BERNSTEIN, PRESIDENT  
(Signature and Title of Authorized Official)Date: APRIL 25, 2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE AFFIDAVIT

STATE OF Massachusetts Date: 5/1/14

COUNTY OF Middlesex S.S.

The undersigned being duly sworn, deposes and says that he/she is the

Principal owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of RL Controls LLC  
(name of M/WBE)

and certifies that since the date of its certification by

SDO  
(SDO)

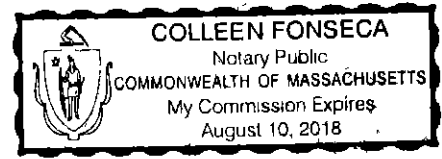
the certification has not been revoked nor has it expired nor has there been any change in the minority status of RL Controls, LLC  
(Name of M/WBE)

Joan Paul Principal owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 1st day of May, 20 14

Notary Public: \_\_\_\_\_

My commission expires: 8/10/18



NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.





**OPERATIONAL SERVICES DIVISION**  
**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor  
Glen Shor  
Secretary  
Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

The Supplier Diversity Office (SDO) is pleased to notify you that your category expansion request has been granted. Your company's current certified business description now reads, COMPONENT LEVEL REPAIR BACK SHOP THAT FOCUSES ON TRANSIT VEHICLE SYSTEMS, INFRASTRUCTURE, AND RIGHT OF WAY TO INCLUDE POWER, TELEMATICS, COMMUNICATION, INFORMATION SOLUTIONS AND LEGACY OR OBSOLETE EQUIPMENT. ADDITIONAL SERVICES INCLUDES ENGINEERING, REPAIR, INSTALLATION, MANUFACTURE AND SUPPORT OF THESE SYSTEMS AND LVPS , PROPULSION & CONTROL, HVAC, VITAL & SIGNAL EQUIPMENT , CONTROL, COMMUNICATION AND WAP REQUIREMENTS; BROKERS OF MRO MATERIAL.

Your category expansion will be listed in both the SDO Certified Business Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;

Tel. (617) 720-3300

[www.mass.gov/osd](http://www.mass.gov/osd)

TDD: (617) 727-2716

Follow us on Twitter: @Mass\_OSD

Fax: (617) 502-8841

- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

- 4) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i. e , the recertification date) At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2 00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF Massachusetts Date: 4/21/14  
COUNTY OF Middlesex S.S.

The undersigned being duly sworn, deposes and says that he/she is the

Principal Owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of RL Controls, LLC  
(name of M/WBE)

and certifies that since the date of its certification by  
SDO  
(SDO)

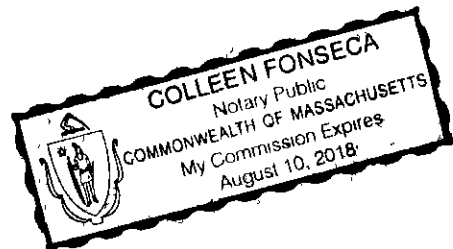
the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of RL Controls, LLC  
(Name of M/WBE)

Gene R. Public Principal Owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 21<sup>st</sup> day of April, 2014

Notary Public: \_\_\_\_\_

My commission expires: 8/10/15



NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

The Supplier Diversity Office (SDO) is pleased to notify you that your category expansion request has been granted. Your company's current certified business description now reads, COMPONENT LEVEL REPAIR BACK SHOP THAT FOCUSES ON TRANSIT VEHICLE SYSTEMS, INFRASTRUCTURE, AND RIGHT OF WAY TO INCLUDE POWER, TELEMATICS, COMMUNICATION, INFORMATION SOLUTIONS AND LEGACY OR OBSOLETE EQUIPMENT. ADDITIONAL SERVICES INCLUDES ENGINEERING, REPAIR, INSTALLATION, MANUFACTURE AND SUPPORT OF THESE SYSTEMS AND LVPS , PROPULSION & CONTROL, HVAC, VITAL & SIGNAL EQUIPMENT , CONTROL, COMMUNICATION AND WAP REQUIREMENTS; BROKERS OF MRO MATERIAL.

Your category expansion will be listed in both the SDO Certified Business Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;

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TDD: (617) 727-2716

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- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

- 4) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i. e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

SECTION B  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF Massachusetts Date: 5/1/14  
COUNTY OF Middlesex S.S.

The undersigned being duly sworn, deposes and says that he/she is the

Principal/owner  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

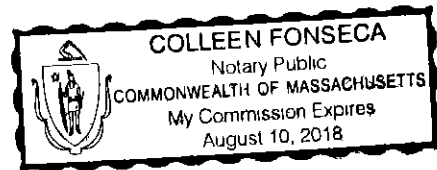
of RL Controls, LLC  
(name of M/WBE)

and certifies that since the date of its certification by  
SDO  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of RL Controls, LLC  
(Name of M/WBE)

Gene P. Webb Principal/owner  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 1st day of May 2014  
Notary Public: [Signature]  
My commission expires: 8/10/18



NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

August 9, 2013

Ms. Lena Walsh  
RL Controls, LLC  
10-V Gill Street  
Woburn, MA 01801

Dear Ms. Walsh:

The Supplier Diversity Office (SDO) is pleased to notify you that your category expansion request has been granted. Your company's current certified business description now reads, COMPONENT LEVEL REPAIR BACK SHOP THAT FOCUSES ON TRANSIT VEHICLE SYSTEMS, INFRASTRUCTURE, AND RIGHT OF WAY TO INCLUDE POWER, TELEMATICS, COMMUNICATION, INFORMATION SOLUTIONS AND LEGACY OR OBSOLETE EQUIPMENT. ADDITIONAL SERVICES INCLUDES ENGINEERING, REPAIR, INSTALLATION, MANUFACTURE AND SUPPORT OF THESE SYSTEMS AND LVPS , PROPULSION & CONTROL, HVAC, VITAL & SIGNAL EQUIPMENT , CONTROL, COMMUNICATION AND WAP REQUIREMENTS; BROKERS OF MRO MATERIAL.

Your category expansion will be listed in both the SDO Certified Business Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification automatically will expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of August 24, 2014, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;

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TDD: (617) 727-2716

Fax: (617) 502-8841  
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- 2) A signed copy of all U.S Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT

- 4) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office "
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified " List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for a substantive review, you will have to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding renewals, please feel free to contact Ms. Nedra D. White, SDO/DBE Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director



**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF Massachusetts Date April 29, 2014

COUNTY OF Suffolk S S.

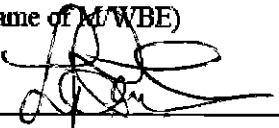
The undersigned being duly sworn, deposes and says that he/she is the

Principal  
(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

LydRiv Communications  
of \_\_\_\_\_  
(name of M/WBE)

and certifies that since the date of its certification by  
Massachusetts Office of Supplier Diversity  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of LydRiv Communications  
(Name of M/WBE)

  
(Signature and Title of Person Making Affidavit)  
Lydia Rivera, Principal

Sworn to before me this 29th day of April, 2014

Notary Public. Lauretta A. Butler  
Lauretta A. Butler

My commission expires: August 29, 2019



LAURETTA A. BUTLER  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires August 29, 2019

NOTE The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION**  
**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1552

Deval L. Patrick  
Governor  
Timothy P. Murray  
Lieutenant Governor  
Glen Shor  
Secretary  
Gary J. Lambert  
Assistant Secretary for  
Operational Services

March 25, 2013

Ms. Lydia M. Rivera  
LydRiv Communications  
11 Hallet Street  
Dorchester, MA 02122

Dear Ms. Rivera:

Congratulations on your certification! The Supplier Diversity Office (SDO) is pleased to notify you that your firm was certified as a minority and woman-owned business enterprise (MBE and WBE) with the certified business description, **CONSULTING IN COMMUNICATIONS/PUBLIC RELATIONS AND COMMUNITY OUTREACH**. **This letter serves as sole and exclusive proof of your firm's SDO certification.**

Your company will be listed in both the SDO Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill MBE and WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations, to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification will automatically expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of March 21, 2015, and every two years thereafter, please send SDO the following documents to renew your certification.

- 1) All company financial statements since the date of the company's then most recent SDO certification,

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- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

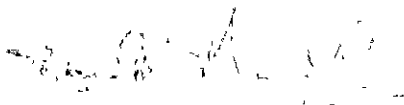
PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT.

- 4) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Supplier Diversity Office "
- 5) A notarized statement that indicates either "A or B" as referenced below  
A "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal "
- 6) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s) "

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of company name, address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the change. Please be sure to inform the agency or awarding authority you are contracting with of this change for proper payment.

Very truly yours,



Reginald A. Nunnally  
Executive Director

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF New YorkDate. April 24, 2014COUNTY OF New York S S.

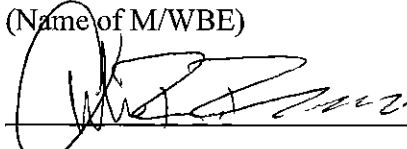
The undersigned being duly sworn, deposes and says that he/she is the  
Vice President

(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of Raul V. Bravo + Associates, Inc.  
(name of M/WBE)

and certifies that since the date of its certification by  
Supplier Diversity Office/Massachusetts Unified Certification Program  
(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority  
status of Raul V. Bravo + Associates, Inc.  
(Name of M/WBE)

  
(Signature and Title of Person Making Affidavit)

Sworn to before me this 24 day of April, 20 14Notary Public. Helen L. RespessMy commission expires May 20, 2014

**HELEN L. RESPASS**  
**Notary Public, State of New York**  
**No. 0896674622**  
**Qualified in New York County**  
**Commission Expires May 20, 2014**

NOTE. The Offeror must attach the M/WBE's most recent certification letter or other documentation  
establishing M/WBE certification to this affidavit.





**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

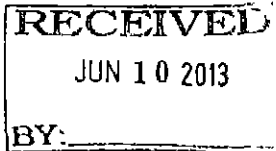
Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**

Executive Office for Administration and Finance

**OPERATIONAL SERVICES DIVISION**

One Ashburton Place, Suite 1017  
Boston, MA 02108-1552



Deval L. Patrick  
Governor

Timothy P. Murray  
Lieutenant Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

June 4, 2013

Mr. Raul V. Bravo  
Raul V Bravo & Associates, Inc.  
1889 Preston White Drive, Suite 202  
Reston, VA 20191

Dear Mr. Bravo:

The Supplier Diversity Office (SDO) is in receipt of your certification renewal information (application). This consists of your request to renew the certification of Raul V Bravo & Associates, Inc. and the required certification renewal information and documentation. Accordingly, SDO has updated your file with this information and documentation. No substantive review of your company was done at this time. **This letter serves as sole and exclusive proof of your firm's SDO certification.**

Based on your certification renewal information (application), the certification of Raul V Bravo & Associates, Inc. as a minority-owned business enterprise (MBE) with the business description of **TRANSPORTATION CONSULTANT; CONSULTING IN MASS TRANSIT, PLANNING AND DEVELOPMENT OF VEHICLE AND SYSTEMS** has been renewed effective the date of this letter. The company will remain listed in the SDO Directory of certified businesses and The Massachusetts Central Register, which is published by the Office of the Secretary of State unless its certification is revoked. Unless revoked, this certification will last for a period of two years and will automatically expire as of June 28, 2015, unless by that date, the certification of the company is renewed again or the company is recertified.

To renew the company's certification at that time, you will need to submit the following information to SDO no later than 30 business days prior to June 28, 2015.

- 1) All company financial statements since the date of the company's then most recent SDO certification;
- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

**PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT**

- 4) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Women/Woman business enterprise have occurred since the

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date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."

5) A notarized statement that indicates either "A or B" as referenced below.

- A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."
- B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."

6) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding your certification renewal, please direct them to Ms. Nedra D. White, Director of Certification, at (617) 502-8852.

Very truly yours,

  
Reginald A. Nunnally  
Executive Director

**SECTION B**  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE AFFIDAVIT**

STATE OF New York Date: 4/25/14

COUNTY OF New York S.S.

The undersigned being duly sworn, deposes and says that he/she is the

PRESIDENT

(Sole Owner, Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of MRI USA Inc.

(name of M/WBE)

and certifies that since the date of its certification by

SDO

(SDO)

the certification has not been revoked nor has it expired nor has there been any change in the minority status of MRI USA Inc.

(Name of M/WBE)

 GAYLE BERNSTEIN

(Signature and Title of Person Making Affidavit)

Sworn to before me this 25 day of April, 2014

Notary Public. Crystal Rodriguez

My commission expires: April 23, 2015

**CRYSTAL RODRIGUEZ**  
Notary Public, State of New York  
No. 01RO616417  
Qualified in Bronx County  
Commission Expires April 23, 2015

NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.



**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
Executive Director

**THE COMMONWEALTH OF MASSACHUSETTS**  
Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
One Ashburton Place, Suite 1017  
Boston, MA 02108-1652

Deval L. Patrick  
Governor

Glen Shor  
Secretary

Gary J. Lambert  
Assistant Secretary for  
Operational Services

March 10, 2014

Ms. Gayle Bernstein  
MRI USA, Inc.  
228 East 45th Street, Suite 1801  
New York, NY 10017

Dear Ms. Bernstein:

The Supplier Diversity Office (SDO) is in receipt of your certification renewal information (application). This consists of your request to renew the certification of MRI USA, Inc. and the required certification renewal information and documentation. Accordingly, SDO has updated your file with this information and documentation. No substantive review of your company was done at this time. **This letter serves as sole and exclusive proof of your firm's SDO certification.**

Based on your certification renewal information (application), the certification of MRI USA, Inc. as a woman-owned business enterprise (WBE) with the business description of **LOGISTICS CONSULTING AND INLAND TRANSPORTATION OF MASS TRANSIT RAIL VEHICLES AND PARTS** has been renewed effective the date of this letter. The company will remain listed in the SDO Directory of certified businesses and The Massachusetts Central Register, which is published by the Office of the Secretary of State unless its certification is revoked. Unless revoked, this certification will last for a period of two years and will automatically expire as of March 11, 2016, unless by that date, the certification of the company is renewed again or the company is recertified.

To renew the company's certification at that time, you will need to submit the following information to SDO no later than 30 business days prior to March 11, 2016.

- 1) All company financial statements since the date of the company's then most recent SDO certification;
- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

**PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT**

- 4) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Woman/Woman business enterprise have occurred since the

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TDD: (617) 727-2716

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date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Massachusetts Supplier Diversity Office."

5) A notarized statement that indicates either "A or B" as referenced below.

- A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."
- B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."

6) A notarized statement that indicates:

"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

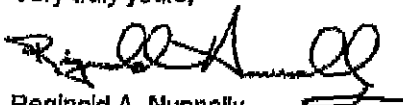
Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the new address or telephone number.

During the period of your certification, if you have any further questions regarding your certification renewal, please direct them to Ms. Nedra D. White, Director of Certification, at (617) 502-8852.

Very truly yours,



Reginald A. Nunnally  
Executive Director

SECTION B  
**PART B TECHNICAL PROPOSAL AND**  
**STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY**

**M/WBE LETTER OF INTENT**  
**(TO BE COMPLETED BY M/WBE FIRM)**

Name of Offeror Firm: CNR MA CORPORATION  
Address: 111 HUNTINGTON AVE  
City: State: Zip: BOSTON, MA 02119

Name of M/WBE Firm: UTERAS INC  
Address: 501 HIGHLAND AVE  
City: State: Zip: MORTON, PA 19070  
Telephone: 610-328-1100

**Description of work to be performed by M/WBE firm:**

MANUFACTURING OF WHEELS AND AXEL ASSEMBLY

The Offeror is committed to utilizing the above-named M/WBE firm for the work described above.

The above work will not be sublet to a non-disadvantaged business enterprise at any tier. The undersigned will enter into a formal contract for the above work with the Offeror conditioned upon the Offeror's award and execution of a Contract with the MBTA.

**Affirmation**

The above-named M/WBE firm affirms that it will perform the portion of the Agreement as stated above.

By: Steve Asati CEO/PRESIDENT  
(Signature and Title of Authorized Official)

Date: 10-12-2014

**If the Offeror does not receive award of the prime Agreement, any and all representations in this Letter of Intent and Affirmations shall be null and void.**

(Offeror shall submit this page for each M/WBE subcontractor.)

SECTION B  
PART B TECHNICAL PROPOSAL AND  
STATEMENTS AND CERTIFICATIONS REGARDING ELIGIBILITY

M/WBE AFFIDAVIT

STATE OF PENNSYLVANIADate: 5/10/2014COUNTY OF DELAWARE

S.S.

The undersigned being duly sworn, deposes and says that he/she is the

BETTY A. SCOTT CEO/PRESIDENT

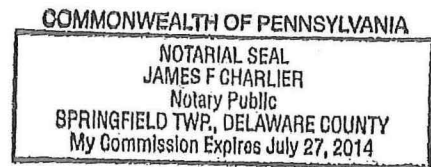
(Sole Owner; Partner, President, Treasurer, or Other Duty Authorized Official of a Corporation)

of UTCRAS INC  
(name of M/WBE)

and certifies that since the date of its certification by

COMMONWEALTH OF MA  
(SDO)the certification has not been revoked nor has it expired nor has there been any change in the  
minority status of UTCRAS INC  
(Name of M/WBE)Betty A. Scott CEO/PRESIDENT

(Signature and Title of Person Making Affidavit)

Sworn to before me this 10 day of MAY, 2014

Notary Public:

James F. Charlier

My commission expires:

JULY 27, 2014

NOTE: The Offeror must attach the M/WBE's most recent certification letter or other documentation establishing M/WBE certification to this affidavit.





**THE COMMONWEALTH OF MASSACHUSETTS**  
 Executive Office for Administration and Finance  
**OPERATIONAL SERVICES DIVISION**  
 One Ashburton Place, Suite 1017  
 Boston, MA 02108-1552

**OPERATIONAL SERVICES DIVISION**

**SUPPLIER DIVERSITY OFFICE**

Reginald Nunnally  
 Executive Director

Deval L. Patrick  
 Governor

Glen Shor  
 Secretary

Gary J. Lambert  
 Assistant Secretary for  
 Operational Services

May 12, 2014

Ms. Betty Scott  
 UTCRAS, Inc. fka: UTC/Rail & Airsources, Inc.  
 17 Country Lane  
 Malvern, PA 19355

Dear Ms. Scott:

Congratulations on your certification! The Supplier Diversity Office (SDO) is pleased to notify you that your firm was certified as a woman-owned business enterprise (WBE) with the certified business description, **PRECISION MACHINE AND SHEET METAL FABRICATORS: SPECIALIZING IN RAILROAD WHEELS AND AXLE SETS, TRUCK ASSEMBLY, REMANUFACTURE ROLLER BEARINGS, TRAINLINE JUMPERS AND OTHER METAL COMPONENT RAILROAD TRAIN CAR ASSEMBLIES, BUILT TO PRINT, ALSO HEAVY STRUCTURAL STEEL INFRASTRUCTURE FABRICATORS FOR BRIDGE WORK, DISTRIBUTORS OF ALP DISC BRAKE.** This letter serves as sole and exclusive proof of your firm's SDO certification.

Your company will be listed in both the SDO Directory and in the Massachusetts Central Register, which are published at regular intervals. The SDO Directory is sent to other state agencies and private organizations that seek to fulfill WBE utilization requirements.

Furthermore, you have a continuing duty to notify SDO of a change in any information that is relevant to the firm's certification eligibility and to ensure that the information and documentation relied upon by SDO to certify or to maintain the certification of the business enterprise is accurate, complete and not misleading. You are required to notify SDO in writing of any change of such information or documentation within thirty calendar days. By way of example and not limitation, any change in ownership, control, investment, ongoing or independence may be considered material. Failure to abide by the continuing duty requirements shall constitute grounds for the business entity's decertification.

Certification is not a fixed designation and SDO reserves the right to monitor your company, do random spot checks, site visits and to conduct periodic reviews of your company's books, contracts, company structure, facilities, job locations; to seek other relevant information and documentation; and to revoke certification of your firm should this become necessary.

Your company's certification will automatically expire two years from the date of certification. If your company continues to meet all applicable certification criteria, no later than thirty (30) business days before your firm's certification renewal date of May 9, 2016, and every two years thereafter, please send SDO the following documents to renew your certification:

- 1) All company financial statements since the date of the company's then most recent SDO certification;



- 2) A signed copy of all U.S. Tax Returns and Schedules since the date of the company's then most recent SDO renewal;
- 3) Corporations must submit all Annual Reports/Letters of Good Standing filed with the Secretary of (YOUR) State since the date of the company's then most recent renewal; and

PLEASE NOTE THAT THE FOLLOWING ITEMS 4-6 CAN BE COMBINED ON ONE NOTARIZED STATEMENT:

- 4) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that no significant changes affecting eligibility as a certified Minority/Minority-Woman/Woman business enterprise have occurred since the date of the company's then most recent date of SDO certification as defined in State regulations 425 CMR 2.00 The Supplier Diversity Office."
- 5) A notarized statement that indicates either "A or B" as referenced below.  
A. "I certify under the pains and penalties of perjury that (Insert your Company Name) has not received any contract(s) as a result of having been SDO certified."  
B. "I certify under the pains and penalties of perjury that: (Insert your Company Name) has received a contract(s) as a result of having been SDO certified." List all contract names, contract amounts and the names of the agencies with which you have contracted from the date of your last SDO renewal."
- 6) A notarized statement that indicates:  
"I certify under the pains and penalties of perjury that (Insert your Company Name) has (number) of employees for each year end given; include owner(s)."

Additionally, every six years, certified companies that wish to remain certified must undergo a substantive review of their certification status with a SDO certification specialist who will re-evaluate the company to determine whether it continues to meet the applicable certification criteria. If you wish to recertify your company when it becomes due for substantive review, you will need to submit the applicable recertification application and all required information and documentation to SDO no later than forty-five (45) business days prior to the date of certification expiration (i.e., the recertification date). At that time, a certification specialist will be assigned to evaluate your company and will make a report and recommendation to the Certification Committee (CC) on whether or not the company continues to meet the applicable certification criteria.

As provided above in 425 CMR 2.00, if your company has a change of company name, address or telephone number, please send a signed letter within thirty days of the change on company letterhead to notify SDO of the change. Please be sure to inform the agency or awarding authority you are contracting with of this change for proper payment.

Very truly yours,



Reginald A. Nunnally  
Executive Director